MEANS

OF

PRESERVING HEALTH,

AND

PREVENTING DISEASES:

Founded principally on an attention to

AIR AND CLIMATE, DRINK, FOOD, SLEEP, EXERCISE, CLOTHING, PASSIONS OF THE MIND, AND RETENTIONS AND EXCRETIONS.

With an Appendix, containing observations on Bathing, Cleanliness, Ventilation, and Medical Electricity; and on the Abuse of Medicine. Enriched with apposite extracts from the best Authors. Designed not merely for Physicians, but for the information of others. To which is annexed, a Glossary of the Technical Terms contained in the Work.

By SHADRACH RICKETSON,

PHYSICIAN IN NEW-YORK.

NEW-YORK:

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1806.

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District of New-York, ss.

BE it remembered, That on the twenty-
L. S. ninth day of August, in the thirty-first year of the Independence of the United States of America, SHADRACH RICKETSON, of the said District, hath deposited in this Office the title of a book, the right whereof he claims as Author in the words following, to wit:

"MEANS of preserving Health and preventing Diseases: Founded principally on an attention to Air and Climate, Drink, Food, Sleep, Exercise, Clothing, Passions of the Mind, and Retentions and Excretions. With an Appendix, containing Observations on Bathing, Cleanliness, Ventilation, and Medical Electricity; and on the Abuse of Medicine. Enriched with apposite extracts from the best Authors. Designed not merely for Physicians, but for the information of others. To which is annexed, a Glossary of the Technical Terms contained in the Work.—By SHADRACH RICKETSON, Physician in New-York."

IN conformity to the Act of the Congress of the United States, entitled "An Act for the Encouragement of Learning, by securing the copies of Maps, Charts and Books to the Authors and Proprietors of such copies during the times therein mentioned;" and also to an Act entitled "An Act supplementary to an Act entitled 'An Act for the Encouragement of Learning, by securing the copies of Maps, Charts and Books to the Authors and Proprietors of such copies during the times therein mentioned,' and extending the benefits thereof to the arts of Designing, Engraving and Etching historical and other prints."

EDWARD DUNSCOMB,
Clerk of the District of New-York.

RECOMMENDATIONS.

WE, the subscribers, having examined a Treatise on the "Means of preserving health and of preventing diseases," composed by Doctor Shadrach Ricketson of this city, embrace with pleasure the present opportunity of giving it our decided and public approbation. The style of the work is performed in so plain and intelligible a manner that it may be readily comprehended by every person of ordinary information; the principles inculcated are uniformly supported by well adapted quotations from the best authors on the subject, forming in the whole a collection of facts and opinions well worthy the attention of every class of society.

NICHS. ROMAYNE,
JAMES TILLARY,
JOHN R. B. RODGERS,
WRIGHT POST,
WILLIAM HAMERSLEY,
JAMES S. STRINGHAM,
WILLIAM MOORE,
VALENTINE SEAMAN.

New-York, Sept. 1, 1806.

New-York, September 1, 1806.

SIR,

I HAVE perused the work you have put into my hands, relative to the "Means of preserving health and of preventing diseases."

It appears to me to be arranged in a perspicuous manner, and to contain principles which will receive general approbation.

You have also very judiciously availed yourself of the observations of some of the ablest writers of the present day, which will give an additional value to your work, especially with those who may not have access to the originals.

Accept, Sir, my best wishes for the success of your undertaking,

Your humble servant,

DAVID HOSACK.

Dr. Ricketson.

INTRODUCTION.

WHILE the minds of many are much engaged in speculative and political matters, I would call their attention to a subject of no less importance, though too generally disregarded. I mean the preservation of health: a blessing, like many others, which few sufficiently prize till they are deprived of it: and, as it is evident, that diseases are much more easily prevented than cured, I have thrown together the following observations on the subject, hoping that they will, at least, show the necessity, and, perhaps, the means of alleviating or lessening the number of disorders to which the human body is liable.

It appears from medical history, that there was anciently a class of physicians, called Hygieinists, who attended people only in health, in order to preserve it, and to prevent diseases. The temperaments of the constitution; the air in which we live; the food that we eat; the houses in which we dwell; the changes in the functions of the body; and those changes to which different ages, seasons, climes, &c. expose people, were the objects of their attention.

Although these practitioners have become extinct in this age, yet there is good reason to believe, that they might be usefully revived and re-established; and that they would, in great measure, frequently supersede the necessity of the therapeutic or curative physicians of the present day.

Medicine, in its extended sense, includes the prevention, as well as the cure and alleviation of diseases; and is divided into the following branches, 1. Physiologia; 2. Pathalogia; 3. Semeiotica; 4. Hygieine; 5. Therapeutica.

Without explaining all those parts, it will be sufficient for my present purpose to say, that it is the fourth division, or Hygieine, that is the particular subject of this work; and is defined to be that branch of medicine which treats of health, and points out the proper means and remedies, with their use, in preserving it.

Neither the nature, nor length of my subject, requires it to be reduced to systematic order. I have, however, thought proper to arrange it under the following heads, viz. Air and Climate, Drink, Food, Sleep, Exercise, Clothing, Passions of the Mind, and Retentions and Excretions. These comprehend what are known in medicine by the singular name of Nonnaturals: but as I do not write merely for the information of physicians, I have mostly avoided technical phrases, and have endeavoured to adapt the language to the capacities of every person, within whose power, the means of preserving health, and preventing diseases, in great measure, consist.

As, however, some medical and difficult terms have unavoidably occurred throughout the work, both in my own composition, and in that of the extracts, I have annexed a Glossary, containing an explanation of them; presuming it will render it more generally acceptable and useful.

As comporting with the general object and plan of the work, I have subjoined an Appendix, containing observations on Bathing, Cleanliness, Ven-

tilation, and Medical Electricity; and on the Abuse of Medicine.

The prophylaxis, or prevention of diseases, is a subject too generally overlooked, and of too much importance to pass unnoticed by attendants and nurses, as well as practitioners; for, though in acute diseases, patients generally have the advice of physicians, yet, even then, the dietetic part or regimen is often neglected or omitted; and, in chronic disorders, as well as in health, more frequently depends on an attention to the nonnaturals, than the whole materia medica.

Though the prophylactic part of medicine be the title, and form the principal design of the work, yet in the course of it, digressions will sometimes be observed to the therapeutic or curative part; as one symptom or slight disorder being obviated on its first appearance, often prevents a more fixed or obstinate disease from settling on the constitution: and hence, the care and treatment may still come under the title of "Means of preserving Health, and preventing Diseases."

The authors whom I have mostly quoted, are Drs. Percival, J. Fothergill, Leake, Willich, Cullen, and Rush: practical writers of established reputation, and who stand foremost on the subjects on which they wrote. I have also made various extracts from the Encyclopedias of Hall and Kendal; and from the Encyclopedia Britannica: works which are no less instructive in medicine, than in other departments of science.

The several extracts may be distinguished by the usual marks of the quotation affixed to them. These now form a considerable part of the work.

It was not my original intention to insert many quotations; but finding the opinions of several emi-

nent authors so exactly to correspond with my own, I have thought proper to add them at full length, in order to confirm and enforce my ideas; and, for that reason, I have myself been less particular on some subjects, especially in pointing out the nature and remote causes of disorders; some knowledge of which is necessary, in the preservation of health, and prevention of diseases.

It may appear to some, that I have adduced a repetition of authorities on the same subjects. This I have done, in order more forcibly to arrest the attention of all to the important subject in view, and to render the work more extensively beneficial.

I might have extended my own observations, and have made a greater number of apposite extracts; but, instead of enlarging the work, I have endeavoured to comprise it in as small a compass as possible.

It is well known, that different countries have different diseases; and that almost every one has some peculiar to itself: consequently, we must suppose, that each climate exposes its inhabitants to a variety of causes which may produce its respective disorders. This consideration will, it is presumed, be no objection, but rather an inducement, to a work of this kind in America.

As inattention to the nonnaturals is the most general cause, not only of diseases, but of debilitated and impaired constitutions; and, as it is observed, that healthy stamina, as well as certain disorders, are hereditary, it ought to be an additional reason for the young, as well as those more advanced in life, to endeavour to preserve their health, and to avoid imbecility, and all diseases that may be transmitted to posterity.

Let not the drunkard, the epicure, or the volup-

tuary say, that because he feels no immediate bad effects from his excesses, none are ever to follow: he may be assured, that if he persevere, weakness, disease, and, perhaps, death, will, sooner or later, be the inevitable consequence.

The idea of making every person his own physician in the cure of diseases, appears foreign, and, in great measure, impracticable; but, as far as respects the prevention of them, and the preservation of health, are, more or less, attainable by all who will attend to the means: to point out which, and to lead people into the observance and practice of them, are the especial objects of this work.

I am not insensible, that some of my readers may discern and suggest some particulars connected with the preservation of health and prevention of diseases, which are not touched in the course of this work; but to treat of every collateral subject that might be considered as coming under the general title or object of it, would extend to another volume; and this would frustrate my principal design of it, which is for general use.

As several experienced physicians have already written on the subject, it may be suggested, that it is incapable of farther improvement; but, when we recollect the importance of health, and the great inattention that is too generally paid to it; and that the utility of many judicious and valuable observations is, in great measure, lost by the method in which they are arranged, and by the voluminous size of the works in which they are contained, it is presumed, that something may still be usefully done in reviving and exhibiting the subject.

With such a view, the present volume is offered to the public.

"In trifles, people are generally assiduous to preserve their property; but, respecting health, such is the indolence; or, it may be said with more truth than severity, the senseless indifference of the human mind, that the true value of that inestimable blessing is seldom known, till it is either greatly injured, or irretrievably lost." *Leake.*

"Though the cure of diseases may, perhaps, most safely be confined to the members of a profession devoted by education and habit to this sole object, yet the preservation of health must, in some measure, be committed to the care and judgment of every individual. The discussion, therefore, of any means to obtain this end, divested, as it may be, of technical language and abstruse speculation, cannot fail of being generally interesting." *Aiken.*

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MEANS

OF

PRESERVING HEALTH,

AND

PREVENTING DISEASES.

CHAPTER I.

AIR AND CLIMATE.

INSTEAD of entering into a minute chymical analysis, or philosophical investigation of the nature, properties, and constituent parts of the atmosphere, which would be neither instructive nor interesting to many, I shall confine myself mostly to such observations on the subject as are likely to be most acceptable to the generality of readers, and to be of the greatest practical utility.

It may not, however, be improper to observe, that the ambient atmospheric air which we breathe, is not a simple, homogeneous, but a compound fluid, consisting of about twenty-seven parts of oxygen, or pure vital air; seventy-two of nitrogen, azote, or mephitic air, and one of carbonic acid gas, or fixed air, by weight, in the hundred.

The first is so much purer than common atmospheric air, that candles will burn, and animals will live six or seven times longer in it; but the two last are both irrespirable, and highly deleterious: as is,

also, hydrogen, or inflammable air, which is the lightest of the whole, and is rather an artificial or accidental product, than a naturally constituent part of the atmosphere. Hence, the greater purity or impurity of the air is in proportion to the greater or less quantity of oxygen combined with those constituent parts; an instrument for observing which has been discovered, called an eudiometer.

It has been ascertained, that a man consumes about one gallon of common air every minute; and, that during the act of respiration, a change takes place in the lungs, by which the blood is freed from a large portion of carbon, which, uniting with a quantity of oxygen, or pure vital air, constitutes what is called carbonic acid, or fixed air. Thus, he is constantly pouring forth from his lungs, and from every pore of his body, a portion of deadly poison to himself and others; and receiving, in return, a supply of vivifying principle to maintain life.

That pure air is essentially necessary to the preservation of health, is too evident to doubt. This is obvious, not only from the difference which is observable between the air of cities and that of the country, but in almost every situation; for, unless it be frequently changed and kept pure, healthy constitutions cannot be preserved so, nor valetudinarians restored to health.

Pure, unconfined air is requisite to the support of vegetable, as well as animal life; and, unless preserved so, is as destructive to both, as stagnant putrid water is to fish.

Air may be deprived of its elasticity, and rendered impure or unfit for respiration, by various means: such as, by rooms being kept long shut

without sufficient ventilation; by much fire, and by many candles or lamps burning; by many people crowded together, especially in the night, and during sleep; and by rooms being overheated, particularly with close stoves: all which, with the means of remedying them, are too obvious to need any particular directions, further than that such places should be frequently ventilated, especially where charcoal has been burnt; as instances have occurred of persons being suffocated in places where it was burning. In this case, the means of recovery are the same as those used for restoring drowned people to life; but to describe these is not within the bounds of my present plan.

It has been found, that the warm oppressive air in heated stove-rooms may be corrected, improved, and rendered more fit for respiration by the vapours of hot water and vinegar; by lime water, and by the growth of vegetable substances of almost every kind: which may, therefore, be always used by persons long and unavoidably confined in such, and other contaminated places.

Houses may not only have the air in them rendered impure by the means already mentioned, but sitting-rooms and bed-rooms which are constantly used, should contain as little furniture, clothing, or other substances that may imbibe perspirable matter, or exhale noxious effluvia, as possible; for, besides the disagreeable sensations which the delicate often feel in such places, instances have not been wanting of the more robust being considerably affected by being long in them.

The most proper time for ventilating or airing rooms, must be determined, in great measure, by the state of the external air. When that is dry and favourable, it may be done in the morning, or

fore part of the day; but it should not be omitted till near, or after sunset, especially in the latter part of summer, when the evening air becomes more unhealthy and dangerous. Sitting-rooms may, however, in hot weather, be safely left open during the night; but the windows of bed-rooms in which people are asleep, should not be far raised in that season; especially if they admit a current of air directly on the beds.

All houses and rooms that have not been lately occupied, should, in cold and damp weather, have fires kindled in them for some time before they are dwelt in; which precaution will be more particularly necessary in stone and brick buildings, which are damper and colder, and therefore not so healthful and comfortable as those of wood.

It deserves to be remarked, that persons long confined in heated or impure air, are hardly sensible of it: indeed, much less so than those who go in from without; which shows that we ought not always to be governed by our own feelings, but should exercise our reason in preserving our health.

The great and principal means of corrupting the atmosphere, and of rendering it unfit for the purposes of healthy life, are the numerous processes of respiration, combustion, and putrefaction which are so extensively carried on in the various departments of nature and art.

When the air of a room becomes impure and unfit for respiration by any of the preceding, or other means, it may be rendered more pure and wholesome by fumigating the apartment with vinegar, juniper berries, and the like.

A discovery has been proposed and recommended for correcting impure noxious air, and for neutralizing and destroying the effects of putrid and

contagious miasma. It consists in fumigating with the oxy-muriatic acid gas, which is prepared by mixing about three parts of common salt, one of black oxyd of manganese, and two of the vitriolic acid together in a close vessel.

The fumes of the nitrous acid, made by pouring the vitriolic acid on nitre placed over a gentle heat, have been also recommended for the same purpose.

Both of these kinds of vapours, it ought to be remembered, are irrespirable, and so deleterious, that it will not be safe to enter rooms that have been fumigated with them until they have been well aired.

The advantages of this discovery being not yet generally known or ascertained in this country, must be left for future experience to determine.

The confined air in deep pits, vaults and wells, and in cellars where liquors are fermenting, often becomes highly deleterious, and has frequently occasioned swoonings, and sometimes even death. Wherefore, it will always be most prudent and safe, before entering such places, to suspend a lighted torch or candle in them. If it burn freely some length of time, they may be safely entered; but, if it go out, burn dimly, or cause a slight explosion, to do so, will be highly dangerous.

The mephitic vapours in such places may be corrected and rendered innocuous by ventilation, or the admission of fresh atmospheric air, by throwing in quicklime, and by pouring hot water into them. Another simple and effectual method is, to fix a leathern tube of sufficient length to reach to the bottom of the place to the nosle of a pair of large bellows, which being worked briskly for some time, will expel the foul, and introduce

so large a portion of fresh air, that a light will burn freely, and a person may safely enter.

Pure, fresh air is not only necessary in preserving health and preventing diseases, but frequently no less essential in curing them: indeed, so much so, that all medicines, without a change of air, often prove unavailing; particularly in agues, coughs, consumptions, asthmas, diarrhœas, and other complaints of the bowels. And there is good reason to believe, that in cities and towns, and in other confined and impure situations, the lives of many, especially of children, are lost for want of early and due attention to this necessary and important particular.

It is observed, that the human constitution possesses a remarkable power of assimilating itself to the air of any place in which we live: and, that it acquires, by habit, the power of resisting, to a certain degree, the effects of those causes which have a tendency to produce disease. Hence, it is remarked, that the people who remove to another country, are much more likely to become sickly, than the native inhabitants of the place, or those who have lived long in it.

And, that there is a peculiar constitution of the air, which disposes to diseases, at certain times, more than at others, is too abundantly verified, by daily observation and experience, to admit of a doubt.

It may be questioned, what climate or state of the air is most conducive to health? I answer, undoubtedly, a cold, or a temperate one; as it is generally observed, that cold countries, climates and seasons are much more healthy than hot; and, probably, would be still more so, were less fire or artificial heat used to guard against cold for we

rarely see the greatest degree of cold disorder the constitution, or produce any morbid effects, unless it be long continued; or be accompanied with moisture; or be preceded by an unusual or greater degree of heat; or the body be kept in an inactive state: wherefore, the best and most healthful preservatives against cold are, to keep as nearly in the same cool temperature of the surrounding air as is possible or comfortable, and to use brisk exercise and warm clothing: and I have accordingly found, that I can endure the winter's cold much better by observing these cautions, than by keeping in rooms much heated, or near large fires. The great Dr. Boerhaave was observed rarely to sit near the fire.

It would be difficult and uncertain to fix on any particular temperature of the air for the most healthful; but, according to the best of my observation, I should judge that to be about the 50th degree of Fahrenheit's thermometer; which is about the mean or standard temperature throughout the whole year for this country.

Though the air and weather of this climate are very variable, and the cold of our winters is very intense, yet the latter is much less than what the human system is capable of bearing, and very far short of what it is in some parts of the world; as will appear from the writings of Dr. Gmelin, of Petersburgh, who went into Siberia, and spent nine years in inquiring into the natural history of that inhospitable country.

After giving an account of the soil, rivers, lakes, mountains, mines, &c., he proceeds to ascertain the state of the air in that climate; previous to which he observes, that in, some places, it frequently snows in the last spring and first fall months; and,

that if the corn is not ready to cut in the last summer month, which is often the case, the snow sometimes prevents it, and buries the harvest.

At Jacutsk, in about the 62d degree N. latitude, and the 130th E. longitude, he dug a hole in the earth on the eighteenth of the first summer month. The soil was found ten or eleven inches deep: below that was sand between two and three feet: after that, all was congealed.

He says, that the mercury often sunk in winter, in the southern parts of that country, to near the 226th degree in De l'Isle's thermometer, which is equal to the 55th 1-2 below 0 in Fahrenheit's; and, that at Kirenginski, much greater degrees of cold are often experienced, as will appear by the following table.

1736, Decem. 11, the mercury stood at the 254th degree in De l'Isle's, which is about 90 below 0 in Fahrenheit's.

	De l'Isle's.	Fahrenheit's.
Dec. 20,	263	$99\frac{44}{100}$
Nov. 27,	270	$107\frac{73}{100}$
Jan. 9,	275	$113\frac{65}{100}$
1735, Jan. 5,	280	120.

These are surprising, and almost incredible degrees of cold; and greater than have, perhaps, been accurately ascertained in any other part of the world.

The greatest difference that I have observed, in the course of my meteorological observations, between the extremes of heat and cold, within one year, in this country, is 115 degrees; which, were the change sudden, is, perhaps, greater than the

human constitution would bear; but it is not yet sufficiently ascertained what extremes it can endure by habit; as, from the preceding account, we see that it bears much greater degrees of cold; and it is equally certain, that, in some climates, it bears much greater degrees of heat than with us.

It is a standard axiom, which will apply to most, or all particulars connected with the preservation of health, 'That all changes should be made by degrees:' which is particularly applicable to the state of the air, and the transitions of the weather. Persons, therefore, who are much chilled with the cold, ought not to go suddenly into a very warm room, nor sit near a hot fire; but rather to go first into a room of moderate temperature, and to keep in motion for some time; and, on the contrary, those who go from a warm apartment, ought not to rush suddenly into the cold air, and remain inactive in it, without putting on some additional clothing, or using some other defence. A speedy and safe method of reviving warmth in persons much chilled with cold and wet, is to apply bladders, filled with hot water, to the pit of the stomach; and, when a limb or member has been frost-bitten, it should, instead of bringing it immediately to the fire, be rubbed with snow, or be held for some time in fresh spring water; in which, in the worst cases, a little of either common salt, nitre, or crude sal ammoniac may be dissolved; and afterwards wrapped in flannel, and gradually warmed. Want of attention to this has not unfrequently occasioned chilblains and mortifications.

The excessive heat of hot climates not only promotes an irregular secretion and excretion of the bile, but renders it peculiarly acrid and irritat-

ing, which is manifest by the frequent occurrence of febrile and intestinal diseases, accompanied with bilious symptoms. All, especially valetudinarians, ought, therefore, to be particularly careful to avoid every extreme of heat and fatigue, and exposure to the evening air, even after the warmest days; which have been frequently observed to be the exciting causes of those disorders so prevalent in hot countries.

In order to preserve health, it is at all times advisable to avoid, as much as possible, exposure to a damp impure air, as well as all extremes of both heat and cold; especially when the constitution has been previously reduced by disease, or has been enervated by any debilitating cause.

The powerful effects of sudden changes of the weather from heat to cold, and the reverse, may be strikingly seen in various inanimate substances, such as glass, stones, and metals.

In order to illustrate and confirm my ideas on the state and changes of the air on the human constitution, I insert the following quotations.

"As observation and experience inform us, that immoderate heat relaxes the body, overheats the blood, and exsiccates or consumes the other fluids; and, that the people who live in temperate regions are more hardy and vigorous, and attain to a greater age than the inhabitants of warmer climates, it follows, from these premises, that we ought not to enervate the human body by keeping it immoderately warm; by covering it with a superfluity of clothes; by plunging it unnecessarily into hot baths; by using strong fires in temperate weather; or by sleeping in warm rooms, and, perhaps, on feather beds—the most heating of all substances. The temperature of a sitting-room should not ex-

ceed 60 degrees of Fahrenheit's thermometer: that of a bed-room may be about 50 degrees, as the medium temperature of our climate is between 50 and 55 degrees.

"As we can neither breathe nor live without fresh air, we ought not to withdraw our bodies too much from the bracing effects of cold. In this respect, we should act conformably to nature; that is, in the same degree as the warmer weather changes to a colder state, we should gradually expose ourselves to the various changes of temperature. The cold will then neither feel unpleasant, nor impede the necessary perspiration; especially if we oppose it with vigorous bodily exercise.

"As every sudden change of the weather from heat to cold, and the reverse, are prejudicial to the body, we ought to guard against every circumstance by which perspiration may be suddenly checked. Hence, we never should remove from a strongly heated apartment into a fresh and cold air, unless we are provided with a warmer dress: in hot days, or after violent exercise, we should not frequent vaults, cellars, or ice-houses; undress immediately after overheating the body; take rest upon a damp soil, or upon stones; nor bathe in cold water.

"Many diseases originate from an impure atmosphere; but a still greater number from the sudden changes of the temperature of the air. Hence, the necessity of exposing ourselves daily to such changes, and of renewing the air in the house and apartments we inhabit, by opening the doors and windows every clear morning, or during the day, as often as convenient. Indeed, cold weather, however intense, has the effect of bracing the fibres of the system in general, and is attended with

danger only when we suddenly remove to a warmer temperature. For this reason, it is extremely injudicious, and a negative compliment paid to a visitor to invite him to the fire-side upon his first entering a house: we should better consult his health, by conducting him to a cold room, or to some distance from the fire, till the temperature of his body be more equal to that of the apartment."

Willich.

"Were a room with fire in it to be perfectly closed, excepting the chimney, the air in it would soon become unwholesome for respiration, and the fire would be soon extinguished, besides other inconveniences. Hence, it appears, that those persons mistake, who expect to keep the air of a room sweet and wholesome, especially for convalescents, by accurately stopping all the smallest openings that admit fresh air. When the current of air that enters into a room, is on some side of it, where it falls immediately upon the persons who sit in the room, then it may be offensive, especially to delicate constitutions. In that case, such opening should be closed; but, at the same time, another opening should be made for admitting fresh air in another more convenient part; for a circulation of air, especially in rooms where a fire is kept, is not only salutary and useful, but is absolutely necessary.

"It is a vulgar error among many people to believe, that fire purifies the contaminated air, by destroying the noxious particles mixed with it; and for this reason they think, that the fire kept in a room where the air is tainted, purifies the room, by rendering the air in it again fit for respiration. Indeed, fire kept in a room or apartment where the air is tainted, as is the case with

hospitals, jails, and the like, does certainly purify the apartment, and the practice is very useful; but this effect is only because the fire promotes the circulation of the air, and dries the dampness of rooms, furniture, &c. so that it is not the infected air that is purified, but is new, fresh, and wholesome air, that, by the action of the fire, has taken the place of the infected air: which infected air, being rarified by the heat, has been expelled from the apartment. Fire and combustion, in general, are so far from purifying contaminated air, that they actually contaminate a prodigious quantity of it in a short time: so, that not only a common fire, but even a lighted candle, when kept in a well-closed room, wherein the external air has not a free access, instead of purifying, renders the air of that room noxious.

"It has long been known, that fresh air is more immediately necessary to life than food; for a man may live two or three days without the latter, but not many minutes without the former. The vivifying principle contained in the atmosphere, so essential to the support of flame, as well as animal life, concerning which authors have proposed so many conjectures, appears now to be nothing else but that pure, dephlogisticated fluid, lately discovered by that ingenious philosopher, Dr. Priestley. The common atmosphere may well be supposed to be more or less healthy, in proportion as it abounds with this animating principle. As this exhales in copious streams from the green leaves of all kinds of vegetables, even from those of the most poisonous kind, may we not, in some measure, account why instances of longevity are so much more frequent in the country than in large cities; where the air, instead of partaking so largely of

this salutary impregnation, is daily contaminated with noxious animal effluvia and phlogiston?

"With respect to climate, various observations conspire to prove, that those regions which lie within the temperate zones, are best calculated to promote long life. But it must be allowed, in general, that the human constitution is adapted to the peculiar state and temperature of each respective climate; so, that no part of the habitable globe can be pronounced too hot or too cold for its inhabitants. Yet, in order to promote a friendly intercourse between the most remote regions, the Author of nature has wisely enabled the inhabitants to endure great and surprising changes of temperature with impunity.

"Heat relaxes and expands all bodies, but cold renders them dense and hard; the effects of which, on the human body, are well known to most people. Though the body is found to preserve a certain degree of heat almost in every situation, it is impossible but that its surface must be affected by the temperature of the ambient atmosphere; and we have not the least reason to doubt, that every part of the body may thus feel the effects of that temperature. What a difference is there between one who, exposed to the south wind, becomes lazy and languid—scarce able to drag along his limbs; and one who feels the force of the cold north wind, which renders the whole body alert, strong, and fit for action." *Encyclop. Britann.*

"Of all the studies to which the desire of preserving the animal constitution can lead, that of the atmosphere is, perhaps, the most deserving of attention. The lungs are the prime agents of all the functions of the body; and the welfare of the lungs depends greatly upon the purity of the mat-

ter they inhale. The air, then, by which we are surrounded, is of much importance to our health: but air, philosophically so called, cannot be impure: of the fluid that we breathe, only one fourth, or less, according to the most accurate computation, is air; the remaining three parts, or more, are composed of the particles which float in that air: it is this compound atmosphere, therefore, that is of so much importance; and its healthiness is governed, in some instances, by natural circumstances; but, in many more, by ourselves; or at least, by mankind. The free course of the atmospherical fluid, is of the first consequence to the animals that breathe in it. On this, alone, its purity depends. Wherever it is confined, it becomes injurious. It deposits unwholesome damps, and retains pernicious effluvia.

"That there are particular situations in the natural disposition of the earth, the atmosphere of which is injurious to animal life, is not to be denied; but these deleterious atmospheres are, by no means, irremediable; they are not irrevocably attached to particular portions of the globe; but dependant upon causes that even man can remove, or introduce at will. Various examples, of recent date, might be collected to show, that the state of the atmosphere, even of extensive countries, is alterable by the labours of man; and, therefore, governed by adventitious circumstances. Many districts, originally wholesome, have been rendered otherwise; and we may reasonably believe, that the bilious fever, that great calamity of Pennsylvania, is produced by a state of the soil, which either has been occasioned by man, or might be improved by industry. When we hear of endemial or epidemic disorders, in countries which

produce large quantities of tobacco or rice, these plants are always to be suspected as the cause; for they must be grown in marshes, real or artificial.

"In all places, whether naturally wholesome or otherwise, much depends on attention to those circumstances that are able to affect the atmosphere immediately about us. In cities, indeed, thousands have nothing of this sort at their choice; and, unfortunately, that description of persons, generally speaking, pay, for various reasons, too little regard to these matters; and thus the evil is increased. Let those, however, who have any influence over the lot of their fellow creatures, remember, that no consideration is more worthy of their benevolence, or of their wisdom. Let them believe this physical truth: 'From the puddle of the beggar, sickness and death arise, to desolate their palaces!" *Kendal's Encyclop.*

"Pure air is more essential to life, even than food itself; for animals will subsist without nourishment for a considerable time; but, when deprived of air, they perish in a few moments.

"Air is necessary to the existence of all animals; for it is not only constantly taken into their lungs by respiration, and largely mixed with the food, so as to make a part of the animal system; but is, also, constantly pressing on the surface of their bodies with different degrees of gravity: it, therefore, can be no wonder that the human constitution should be so variously affected by it.

"The atmospheric air we breathe, till of late, was supposed to be a simple element: but philosophic investigation demonstrates, that, instead of pure air, this fluid, in any given quantity, consists of scarcely two parts of pure, dephlogisticated air, one, which is impure, or as it is called by the che-

mists, phlogisticated air, and about a fourth part of fixed air. Pure, or dephlogisticated air has nearly eight times the power of common air, either in sustaining life by respiration, or supporting flame; for, without it, animals instantly die, and flame is extinguished in a moment.

"After common air has been taken into the lungs in this state, and then breathed out or expired; on examination, it has been found, that the gross, impure air remained unaltered; the pure air was diminished in quantity; and the fixed air increased.

"The proportion of these several kinds of air being different in different places, according to the nature of soil, water, and situation, the reason becomes obvious why the health of the human body is so variously affected by them, and why some diseases are endemial or peculiar to certain places.

"By pure air, then, can only properly be meant that which is most free from the noxious effluvia of metals, and corrupted steams of vegetable or animal bodies; and that which is neither too hot, moist, or dry, may be called temperate air.

"The atmosphere, therefore, of our earth consits of pure air, phlogistic air, and aërial acid; and the combination of these constitutes the common air we breathe; which, as already observed, becomes unwholesome by frequent respiration, the combustion of fuel, or effluvia of putrid bodies, so as to be rendered highly noxious.

"Every animal is surrounded by its own atmosphere: consequently, the cleaner such bodies are kept, more pure and wholesome will be that air taken into their lungs by respiration; a circumstance of greater importance to health than is ge-

nerally imagined; for putrid fevers and jail distempers, equal in malignity with the plague itself, are chiefly occasioned by nastiness, marsh vapours, or corrupted air.

"As it is universally allowed, that the air of certain places has a pernicious effect on human bodies; so, on the contrary, it cannot be doubted, but that which is temperate and pure, must contribute to the preservation or recovery of health. Diseases called endemial, or those peculiar to certain places, as agues, dropsies, &c. and, on the contrary, healthy situations beneficial to animal life, both demonstrably shew, how much health may be affected, for the better or worse, by causes always present to the body, and insensibly acting on the constitution." *Leake.*

"The colder the country, in general, the fewer and the less violent are the diseases. Scheffer tells us, that the Laplanders know no such thing as the plague, or fevers of the burning kind, nor are subject to half the distempers we are. They are robust and strong, and live to eighty, ninety, and many of them to more than one hundred years: and, at this great age, they are not feeble and decrepid, as with us, but a man of ninety is able to work, or travel, as well as a man of sixty with us. They are subject, however, to some diseases more than other nations: thus, they have often distempers of the eyes, which are owing to their living in smoke, or being blinded by the snow. Pleurisies and inflammations of the lungs are, also, very frequent among them; and the small-pox often rages with great violence.

"It has been always observed, that people of particular places were peculiarly subject to particular diseases, which are owing to their manner of

living, or to the air and effluvia of the earth and waters. Hoffman has made some curious observavations on diseases of this kind. He observes, that swellings of the throat have always been common to the inhabitants of mountainous countries; and the old Roman authors say, 'Who wonders at a swelled throat in the Alps?' The people of Switzerland, Carynthia, Styria, the Hartz forest, Transylvania, and the inhabitants of Cronstadt, he observes, are all subject to this disease from the same cause." *Hall's Encyclop.*

As the preservation of health, and prevention of diseases, depend much upon an attention to, and a knowledge of their several causes, the following extract on that subject, though not coming under the particular head of the present chapter, may not be wholly improper to be inserted here.

"The causes of diseases are various; often obscure, and sometimes totally unknown. The most full and perfect proximate cause is that which, when present, produces a disease; when taken away, removes it; and, when changed, also changes it. There are, also, remote causes, which physicians have been accustomed to divide into the predisponent and exciting ones. The former are those which only render the body fit for a disease, or which put it into such a state that it will readily receive one. The exciting cause is that which immediately produces the disease in a body already disposed to receive it.

"The predisponent cause is always inherent in the body itself; though, perhaps, it originally came from without: but the exciting cause may either come from within, or from without.

"From the combined action of the predisponent and exciting causes, comes the proximate

cause, which, neither of the two taken singly, is able to produce; seeing, neither every exciting cause will produce a disease in every person, nor will every one predisposed to a disease, fall into it without an exciting cause. A body predisposed to disease, therefore, has already declined somewhat from a state of perfect health, although none of its functions are impeded, in such a manner that we can truly say, the person is diseased. Yet, sometimes, the predisponent cause, by continuing long, may arrive at such an height, that it alone, without the addition of any exciting cause, may produce a real disease. Of this, we have examples in the debility of the simple solids, the mobility of the living solids, and in plethora. The exciting cause, also, though it should not be able immediately to bring on a disease; yet, if it continues long, will, by degrees, destroy the strongest constitution, and render it liable to various diseases; because it either produces a predisponent cause, or is converted into it, so that the same thing may sometimes be an exciting cause, sometimes a predisponent one; of which, the inclemencies of the weather, sloth, luxury, &c. are examples.

"Diseases, however, seem undoubtedly to have their origin from the very constitution of the animal machine; and hence, many diseases are common to every body, when a proper exciting cause occurs, though some people are much more liable to certain diseases than others. Some are hereditary; for, as healthy parents naturally produce healthy children, so diseased parents as naturally produce a diseased offspring. Some of these diseases appear in the earliest infancy; others occur equally at all ages; nor are there wanting some which lurk unsuspected, even to the latest old age,

at last breaking out with the utmost violence on a proper occasion. Some diseases are born with us, even though they have no proper foundation in our constitution, as when a fœtus receives some hurt by an injury done to the mother; while others, neither born with us, nor having any foundation in the constitution, are sucked in with the nurse's milk. Many diseases accompany the different stages of life; and hence, some are proper to infancy, youth, and old age. Some, also, are proper to each of the sexes; especially the weaker sex; proceeding, no doubt, from the general constitution of the body, but particularly from the state of the parts subservient to generation. Hence, the diseases peculiar to virgins, to menstruating women, to women with child, to lying-in women, to nurses, and to old women. The climate itself, under which people live, produces some diseases; and every climate hath a tendency to produce a particular disease, either from its excess of heat or cold, or from the mutability of the weather. An immense number of diseases, also, may be produced by impure air, such as is loaded with putrid, marshy, and other noxious vapours. The same thing may happen, likewise, from corrupted aliment, whether meat or drink; though even the best and most nutritious aliment will hurt, if taken in too great quantity; not to mention poisons, which are endowed with such pernicious qualities, that even when taken in very small quantities, they produce the most grievous diseases, or, perhaps even death itself. Lastly, from innumerable accidents and dangers to which mankind are exposed, they frequently come off with broken limbs, wounds, and contusions, sometimes quite incurable; and these misfortunes, though proceeding from an

external cause at first, often terminate in internal diseases.

"Hitherto, we have mentioned only the dangers which come from without: but those are not less, nor fewer in number, which come from within. At every breath, man pours forth a deadly poison both to himself and others. Neither are the effluvia of the lungs alone hurtful: there flows out from every pore of the body, a most subtile and poisonous matter; perhaps, of a putrescent nature, which being long accumulated, and not allowed to diffuse itself through the air, infects the body with most grievous diseases: nor does it stop here; but produces a contagion which spreads devastation far and wide among mankind. From too much, or too little exercise of our animal powers, also, no small danger ensues. By inactivity, either of body or mind, the vigour of both is impaired; nor is the danger much less from too great employment. By moderate use, all the faculties of the mind, as well as all the parts of the body, are improved and strengthened; and here, nature has appointed certain limits, so that exercise can neither be too much neglected, nor too much increased with impunity. Hence, those who use violent exercise, as well as those who spend their time in sloth and idleness, are equally liable to diseases; but each to diseases of a different kind: and hence, also, the bad effects of too great, or too little employment of the mental powers.

"Besides the dangers arising from those actions of the body and mind, which are in our own power, there are others arising from those which are quite involuntary. Thus, passions of the mind, either when carried to too great excess, or when long continued, equally destroy the health; nay,

will even sometimes bring on sudden death. Sleep, also, which is of the greatest service in restoring the exhausted strength of the body, proves noxious, either by its too great, or too little quantity. In the most healthy body, also, many things always require to be evacuated. The retention of these is hurtful, as well as too profuse an evacuation, or the excretion of those things, either spontaneously or artificially, which nature directs to be retained. As the solid parts sometimes become flabby, soft, almost dissolved, and unfit for their proper offices; so, the fluids are sometimes inspissated, and formed even into the hardest solid masses. Hence, impeded actions of the organs, vehement pain, various and grievous diseases. Lastly, some animals are to be reckoned among the causes of diseases: namely, such as support their life at the expense of others: and these either invade us from without, or take up their residence within the body, gnawing the bowels while the person is yet alive, not only with great danger and distress to the patient, but sometimes even producing death itself.

"The remote causes of these different states, whether predisponent or exciting, are very various. In the first place, idiosyncrasy itself, or the innate constitution of the body, contributes very much to produce the above-mentioned effects. Some have naturally a much harder and drier temperament of the body than others; men, for instance, more than women; which can, with the utmost difficulty, indeed, scarce by any means whatever, admit of an alteration. The same thing takes place at the different periods of life; for, from first to last, the human body becomes always drier and more rigid. Much, also, depends on the diet made use of, which always produces a correspond-

ing state of the solids, in proportion to its being more or less watery. Neither are there wanting strong reasons for believing, that not only the habit of the body, but even the disposition of the mind, depends very much on the diet we make use of. The good or bad concoction of the aliment, also, the application of the nourishment prepared from it; and, likewise, the state of the air with regard to moisture or dryness, affect the temperament of the body not a little: and, hence, those who inhabit mountains or dry countries, are very different from the inhabitants of low marshy places. Lastly, the manner of living contributes somewhat to this effect: exercise presses out and exhales the moisture of the body, if in too great quantity; on the contrary, sloth and laziness produce an effect directly opposite, and cause a redundancy of humour." *Encyclop. Britann.*

CHAPTER II.

DRINK.

A CERTAIN proportion of drink is necessary to the solution and digestion of the food; but, like the other nonnaturals, it may be used too freely, or too sparingly: the former is, however, much the more common case: and the best rule is, to drink only when thirsty, and rarely at other times, except at meals, when it is well to intermix a proportion of liquids with our food for its due digestion, assimilation, and excretion; but an excess in this, as in other things, instead of having the desired, has a contrary effect; and, by distending and oppressing the stomach, creates uneasiness during the concoction of the food.

Drink is taken with two different intentions: one is, to quench thirst; which is agreeable, natural, and necessary; the other is, merely to stimulate and gratify the palate and stomach; which, by use, may become habitual; and, particularly, if strong liquors are freely indulged in, highly injurious.

Among the great variety of drinks used by man, there is none more salubrious, and better adapted to quench thirst, than water. But in this, as in many other things, we have not been content with

Nature's simple, though valuable gifts; but have been seeking out others to our own prejudice. I do not mean, that there are no others to be used; but that there are few besides, which are so innocent as water.

Water should be pure, or as nearly so as can be obtained, in order to be healthful: but very few of our native well and spring waters are so—most of them containing either earthy, saline, metallic, or other heterogeneous particles. Indeed, many abound so largely with a calcarious earth, or a nitrous selenite, that it is not uncommon to see tea-kettles lined with an earthy incrustation of considerable thickness, from their decomposition.

It would, doubtless, be most consistent with health, to refrain from such impure water altogether; but, if that is impracticable, it may be rendered purer and more fit for use, by drawing off about two-thirds by distillation; by which process, sea-water may be made fresh and potable. Hard or impure water may, also, be purified by simple boiling for fifteen or twenty minutes; and, after settling, by decanting it. It may be further improved, by passing it through a filtering stone, or by straining it through sand, prepared in the following manner: Fill the neck of a large funnel with sponge, over which spread a layer of coarse sand, then a piece of thick flannel, after which, another layer of sand.

Pure and wholesome water may generally be known by being light, transparent, and insipid; by mingling uniformly with soap; and by boiling herbs and pulse tender, which hard impure water will not do: this, however, may be rendered soft and miscible with soap, by the addition of potash, salt of tartar, or some other alkaline salt. The

nature of water may, also, be frequently ascertained by the soil and substances over which it flows; for, if it pass through clay, marle, limestone, or beds of any mineral substances, it will rarely be found pure and wholesome. Some waters are imbued with arsenic; others with copper, or vitriol of iron: all which should be avoided as noxious and deleterious. It is found, that water flowing through leaden pipes, and standing in wells lined with bricks, often becomes thereby hard, impure, and unhealthy: hence, the impropriety of using lead for conduits, and of lining wells with bricks. It is, likewise, imprudent to use the water of wells that have been long neglected or disused, until they have been first well cleansed.

Persons afflicted with the gravel, or other disorders of the urinary passages, should be particularly careful not to use hard, impure water; but, if they cannot get that which is naturally pure, they ought to depurate it in one of the ways I have mentioned, particularly by distillation; as distilled water has been found to have a solvent effect on the human calculus. The same caution is, likewise, necessary for such as are troubled with the scrofula, and other complaints of the glands. Sea-water has, however, been found useful in strumous swellings, and certain glandular obstructions. It is thought, that clear river water, and rain or snow water, collected at a distance from towns, preserved clean, filtered as above directed, and used fresh, would be more wholesome for culinary purposes, than most of the common well and spring waters. They will, also, by these means, become tolerably grateful.

The importance and necessity of using pure water, are not sufficiently attended to; for, it has been observed, that the continued use of that

which is not so, has been productive of certain disorders; particularly, the gravel and nephritic complaints. And it is generally believed, that the bronchocele or goitrè, and other glandular swellings of the throat, which are so common to the inhabitants of certain countries, are occasioned by the water they use. The water is generally hard or impure in the northwestern part of this state, where I have observed many people affected with the goitrè, or swelled, or thick neck, as it is there commonly called; which is generally ascribed, by the inhabitants of the country, to the water; but farther observations are, I think, wanting to ascertain this matter; and the subject is accordingly recommended to the attention of observing and ingenious physicians.

Hard water has been found to be more antiseptic than that which is pure; and, therefore, may be better adapted for keeping at sea. It ought, however, before being used, to be softened by some of the means mentioned.

People should never use corrupted or putrid water, when it can be avoided: this, however, they are sometimes obliged to do in long sea-voyages: when it may be partly prevented, corrected, and improved, by mixing with it, either a little charcoal, quicklime alum, some fixed alkaline salt, or acids of the vitriolic or vegetable kind. Hence, the utility of charring the inside of casks containing water on ship-board.

After water is well chosen, the next thing is to use it properly; for, although the most simple and innocent in its nature of all drinks; yet, when used imprudently, it has, sometimes, occasioned premature or sudden death. Persons who are very thirsty during, or after exercise, instead of

drinking large draughts of cold water, or other liquids, will find a safety and advantage in sipping but a little at once, frequently intermixing a little food, or some other substance that promotes a discharge of spittle; which, by moistening the mouth and throat, tends greatly to relieve the uneasy sensation arising from thirst. Bathing has been found effectual in allaying thirst; and it may, therefore, be used at sea, when fresh water is not obtainable. Some are in the practice of drinking every morning, soon after rising, a draught of pure cold water, fresh from the fountain; and others repeat it at evening before retiring to rest; which has been found very salutary; indeed, much more so, as well as, more innocent, than the daily, pernicious, and unsafe habit of drinking morning drams or bitters.

Cold water should not be drunk, in large quantities, in hot weather; or, when the body is preternaturally warm: to obviate the consequences of which, it is most prudent to drink but little at a time, previously grasping the vessel sometime in the hands; or, when there is a necessity to drink frequently, it may be safest to mix with it a portion of either wine, ardent spirits, ale or beer, vinegar, cider, molasses or sugar, milk, whey, or buttermilk: upon each of which, I shall offer a few remarks. It may not, however, be amiss to observe previously, that when a person has drunk too much cold water, and feels the usual effects, such as pain in the stomach, distention or inflation of the bowels, coldness of the extremities, &c. he ought to use brisk exercise, either on foot or horseback: take some warm cordial drink; and, if these are ineffectual, he should encourage a speedy sweat, by taking some stim-

ulating medicines, and, by bathing his feet in warm water, with frictions by means of the flesh-brush or flannel: to which, if the case be alarming, a full dose of laudanum, or of the essence of peppermint, may be added.

Mineral, or medicinal waters may, in one sense, come under the general head of drink; and are sometimes used with a prophylactic intent; but they fall not within my present plan to describe, nor to point out the various cases in which they may be used, either in preventing or curing diseases.

"Pure water, a simple medicine of sovereign efficacy, is that elemental fluid designed by nature for the nourishment of all bodies, whether animal or vegetable. It softens the food in the stomach; attemperates corrupted bile; dissolves the sharp salts and rancid oils; and washes them out of the body by the secretion of urine. How superior is this inestimable liquor, gushing from the pure bosom of a rock, as from the cellar of Nature, to all the artificial compounds which luxury, or human invention can devise!

"The feverish and sickly stomach often thirsts after a draught of the crystal spring, as the greatest cordial, while it nauseates the richest wines; and, indeed, wine, beer, and all other made liquors, are only water sophisticated with different proportions of oil, salts, and sulphur, so altered by fermentation, as to set their spirit at liberty, which then taken into the body, produces a narcotic effect on the nerves, and occasions intoxication.

"I am far from supposing that those liquors can never be beneficial; and would only infer, that they are prejudicial by abuse; that they only become necessary from custom: that they ought to

be used with great moderation, and rather as cordials than common drinks.

"Water-drinkers, and those who chiefly live on vegetables, are observed to be more healthy and long-lived, than others. In such, the faculties of the body and mind are more strong; their teeth more white; their breath is more sweet; and their sight more perfect, than in those who use fermented liquors, and much animal food. They are less subject to gout, and gravel, colic, scurvy, or apoplexy, and acute diseases in general." *Leake.*

Section 1. *Wine.*

Wine is to most people an agreeable, and a cordial drink; and, hence, much used; and, when occasionally, or in small quantity, mixed with water, may be very innocent; but when drunk frequently and copiously, it generally, sooner or later, injures the constitution, or renders it subject to inflammatory diseases. It is a powerful stimulant, the long continued use of which, rarely fails to induce debility. Hence, great wine-drinkers, somewhat advanced in life, are generally low-spirited, and often afflicted with a long train of hypochondrical symptoms and incurable diseases, particularly, the gout, which is a strange complication of stimulating and debilitating powers: in short, wine is more properly a medicine, than an article of common drink; and, as such, may be applied with salutary effects in various cases. Those who indulge in wine and strong liquors, are, also, often afflicted with that painful and excruciating disorder, the gravel, which rarely yields to the power of any medicine hitherto discovered.

Although I condemn the frequent and habitual

use of wine, I, by no means, think it wholly unnecessary for persons of certain constitutions occasionally; and especially at meal times, when it sometimes has a good effect in promoting and assisting digestion.

There is a great variety of wines; some of which are better for certain medicinal purposes than others; but which it is not my province, at present, to point out: the choice must, therefore, be left, in great measure, to the physician, and every person's own observation and experience. Some wines are doubtless adulterated with ingredients highly injurious to health; which is an additional inducement to use them as little as is really necessary.

Various pleasant and wholesome wines may be made in this country from the juices of cherries, currants, raspberries, blackberries, and strawberries, little inferior to some of the imported wines; and, unquestionably, more innocent.

Cider may be made into a liquor, which, with sufficient age, becomes a tolerable wine, not unlike Rhenish or Malaga; and which may be used as a substitute for them.

"The more water wine contains, it is the more suitable a beverage at table; and, when weak, it is, in some degree, calculated to quench thirst. Strong wines, on the contrary, excite thirst; as they are drying and affect the organs of secretions. It is only a stimulant, and not a permanently strengthening cordial; for, most wine-drinkers, who indulge in excess, die of relaxation and debility.

"The copious use of wine, though not to the degree of inebriation, is yet exceedingly debilitating to the stomach; as it checks digestion, and

excites diarrhœa, if white wine, and obstructions, if port-wine be the favourite liquor: it makes the fibres dry and rigid, and the cheeks, and the whole surface of the body, turn sallow—a symptom of bad digestion: the powers of the body and mind are enfeebled, and dropsy or gout, and, sometimes, sudden death, are the consequences. Plethoric young men, and such as have weak stomachs and lungs, should not accustom themselves to the use of wine. To give it to infants or youth, is a practice highly pernicious, except in very small quantities indeed. In short, wine should be used as a medicine only, if intended to produce salutary effects. To the phlegmatic, to the aged, and to those who are disposed to flatulency, and after fat meat, it is highly beneficial, if used with prudence and moderation.

"As wine encourages perspiration, it dries the body, makes it lean, and may, therefore, be of service to cold and phlegmatic constitutions. It stimulates the bile, and excites the appetite to a repetition of excess, so that persons once habituated to drinking, can but gradually relinquish this seductive practice. To drink wine copiously every day, is as improper and pernicious as to take medicines by way of diet: nothing is so much calculated to occasion habitual indigestion." *Willich.*

Section 2. *Ardent or Distilled Spirits.*

I have mentioned ardent spirits as one means of preventing the sudden bad effects of drinking too much cold water; and a little mixed with it, may be innocently and usefully employed for that purpose: but I do not mean to recommend them as a frequent, habitual, or necessary part of drink; for,

I think, that their frequent and excessive use is not only unnecessary, but highly injurious; and has destroyed thousands; perhaps, more than either pestilence, famine, or the sword. I need not, therefore, take much pains to show their evil consequences, either in a medical, political, moral, or religious point of view; but will just add, that the formidable, and, generally, mortal diseases of gout, dropsy, epilepsy, palsy, apoplexy and phrensy, are among their numerous offspring.

It is entirely consistent with reason, as well as experience, that they should be attended with these effects; for all distilled spirits are uniformly of a stimulating and heating nature; and, as I observed in the preceding section, a long continued, and frequently repeated application of stimulant powers, is sure to be followed by a contrary state, debility. Hence, drinkers of spirits are not only subject to the same train of symptoms and diseases as wine-drinkers; but, generally, attended with greater, and more sudden mortality: in short, people who are under the operation of ardent spirits, or other heating liquors, are doubly subject to diseases; for, while they are under the first, or stimulant effect, they are liable to inflammatory disorders; and, when that state is succeeded by the opposite, or debility, they are then prone to all the group of nervous complaints, and particularly to the dropsy, which is well known to be owing, in great measure, to an enervated or weakened state of the body: indeed, so much so, that drunkards are, of all others, the most afflicted with this disease. And it deserves to be mentioned, that most of the disorders brought on by intemperate drinking, prove incurable by medicine.

Some people drink ardent spirits to warm them

in cold, and to cool them in hot weather. They have, it is true, both of these effects: the first operation is stimulant, increasing the action of the heart and arteries, and, therefore, always necessarily heating: the second is a sense of flaccidity and coldness, which is rather morbid than salutary; especially when frequently repeated or long continued: hence, drunkards are, of all others, the most susceptible of cold, and pinched with it; even to that degree that they are frequently found frozen to death.

I expect it will be sufficiently understood, that I do not mean to recommend the use of rum, or other spirituous liquors, in hot weather, or during laborious exercise; for, I think, they have occasioned more mischief and disorders than ever they prevented: in short, they are not so properly an article of frequent and common drink, as a medicine; and, therefore, they ought to be used as such occasionally, and rarely at other times. The idea, that spirits assist digestion, appears to be groundless and erroneous, except in certain constitutions and complaints; but their frequent and repeated use, certainly impairs that important function in the animal economy.

Their use in harvest, and in other seasons of laborious exercise, may, in great measure, or entirely, be superseded by other cheaper and more innocent substitutes; which, for that reason, I shall be more particular in mentioning. From their inflaming nature, and heating effects, they have not improperly been called, by some writers, by the apposite and emphatic name of Liquid fire.

The shameful effects of drunkenness are so flagrant and destructive, both to health and morals,

that no one ought to hesitate to prevent, rather than wait to cure the evil.

"If drunk in hot weather, or after violent perspiration, they check this function, by contracting the vessels of the skin, and closing the pores. On account of this contracting power, they are sometimes of service to a person whose stomach is overloaded with beer or water, to assist their passage through the proper emunctories. After violent exercise and heat, a dram of spirits is more proper than cold water or beer, though a cup of tea or other diluent drink is preferable. After fat or strong food, spirits are exceedingly improper: for, instead of promoting the solution and digestion of the food in the stomach, they rather tend to retard it. We may be convinced of this, by attending to the effects they produce on inanimate substances: for these are preserved from dissolution and putrefaction more effectually in spirits, than in any other liquid. Thus, we may learn, that spirits will impede digestion; and render strong food, taken into the stomach, still more indigestible. Many persons are accustomed to take a dram as a remedy against flatulency: if the stomach be clean and undepraved, they certainly will be relieved by it; but, on the contrary case, their expectations will be disappointed.

"Ardent spirits are rendered still more contracting and prejudicial to the stomach, when combined with acids, as in punch; and, for the same reason, the habit of taking drams after fruit, or any acid vegetable, is absurd.

"To persons of relaxed fibres, distilled liquors may, under certain limitations, be useful; as they increase the elasticity and compactness of the ves-

sels. But, to those whose fibres are already rigid, spirits are obviously pernicious, and have a tendency to bring on a premature old age. They stop the growth of, and are otherwise very improper for young persons.

"That spiritous liquors incrassate and coagulate the fluids, we may easily discover in those who are addicted to the use of them: they have a thick blood, are troubled with constant obstructions of the intestines, and their unavoidable consequences; such as, a gradual depravation of the nervous system, loss of memory, debility of mind, hypochondriasis, jaundice, dropsy; and, at length, consumption of the lungs. The throat and stomach of habitual tipplers are rendered callous; and, at length, almost closed; the glands are indurated, and, consequently, digestion is, in the highest degree, impaired." *Willich.*

"But, of all the evils which exert their baneful influence over the stomach, none is so pernicious in its consequences as the immoderate use of spirituous liquors. Like liquid fire, they will harden and contract its fibres, and, as it were, cauterize and crisp up its tender, nervous lining; at once destroying both feeling and appetite, and rendering it a mere borachio, or leather bottle.

"For this reason, those addicted to the pernicious habit of dram-drinking, are always complaining of a cold stomach, which, in fact, is rendered such by the very means they preposterously use to prevent it, and constantly repeat, to the slow, but sure destruction of their constitution.

"Besides these bad effects of spirituous liquors, they harden animal food, and render it indigestible. From the same heating power, they contract the glands, coagulate their juices, and rob the

stomach of its natural moisture, which, like the saliva, is essentially necessary to promote digestion.

"By such means, the faculties of the body and mind are injured, and at last destroyed: for those who indulge in this pernicious gratification, soon lose their appetite, and are constantly troubled with sickness at stomach and sinking of spirits. Loss of memory, confusion of ideas, and nervous tremor, are all its sad and certain consequences. In hot climates, spirituous liquors produce frenzy; and in cold ones, stupidity and abolition of the senses.

"In those who have died from the abuse of spirituous liquors; the liver, spleen, and abdominal viscera, in general, were found preternaturally hardened, and rendered as it were coriaceous, like leather. Excessive dram-drinkers are prematurely cut off by consumptions, dropsy, asthma, or apoplexy." *Leake.*

"Let us next attend to the chronic effects of ardent spirits upon the body and mind. In the body, they dispose to every form of acute disease: they, moreover, excite fevers in persons predisposed to them, from other causes. This has been remarked in all the yellow fevers which have visited the cities of the United States. Hard drinkers seldom escape, and rarely recover from them.

"The following diseases are the usual consequences of the habitual use of ardent spirits, viz. 1. A decay of appetite, sickness at stomach, and a puking of bile, or a discharge of a frothy and viscid phlegm by hawking, in the morning. 2. Obstructions of the liver. 3. Jaundice, and dropsy of the belly and limbs; and, finally, of every

cavity in the body. 4. Hoarseness, and a husky cough, which often terminate in consumption, and, sometimes, in acute and fatal diseases of the lungs. 5. Diabetes; that is, a frequent and weakening discharge of pale, or sweetish urine. 6. Redness and eruptions on different parts of the body. They generally begin on the nose, and, after gradually extending all over the face, sometimes descend to the limbs in the form of leprosy. They have been called 'Rum-buds,' when they appear in the face. In persons who have occasionally survived these effects of ardent spirits on the skin, the face, after a while, becomes bloated, and its redness is succeeded by a death-like paleness. Thus, the same fire which produces a red colour in iron, when urged to a more intense degree, produces what has been called a white heat. 7. A fetid breath, composed of every thing that is offensive in putrid animal matter. 8. Frequent and disgusting belchings. 9. Epilepsy. 10. Gout in all its various forms of swelled limbs, colic, palsy, and apoplexy. Lastly, 11. Madness.

"Most of the diseases which have been enumerated, are of a mortal nature. They are more certainly induced, and terminate more speedily in death, when spirits are taken in such quantities, and at such times, as to produce frequent intoxication; but it may serve to remove an error, with which some intemperate people console themselves, to remark, that ardent spirits often bring on fatal diseases without producing drunkenness. I have known many persons destroyed by them, who were never completely intoxicated during the whole course of their lives. The solitary instances of longevity, which are now and then met with in hard drinkers, no more disprove the deadly effects

of ardent spirits, than the solitary instances of recoveries from apparent death by drowning prove, that there is no danger to life from a human body lying an hour or two under water.

"Not less destructive are the effects of ardent spirits upon the human mind. They impair the memory; debilitate the understanding; and pervert the moral faculties. They produce not only falsehood, but fraud, theft, uncleanliness, and murder. Like the demoniac mentioned in the New Testament, their name is 'Legion;' for they convey into the soul a host of vices and crimes.

"I shall now take notice of the occasions and circumstances which are supposed to render the use of ardent spirits necessary, and endeavour to shew, that the arguments in favour of their use in such cases, are founded in error; and that, in each of them, ardent spirits, instead of affording strength to the body, increase the evils they are intended to relieve.

"1. They are said to be necessary in very cold weather. This is far from being true; for the temporary warmth they produce, is always succeeded by a greater disposition in the body to be affected by cold. Warm dresses, a plentiful meal just before exposure to the cold, and eating occasionally a little gingerbread, or any other cordial food, is a much more durable method of preserving the heat of the body in cold weather.

"2. They are said to be necessary in very warm weather. Experience proves that they increase, instead of lessening the effects of heat upon the body, and thereby dispose to diseases of all kinds. Even in the warm climate of the West Indies, Dr. Bell asserts this to be true. 'Rum,' says this author, 'whether used habitually, moderately, or in excessive quantities, in the West Indies, always

diminishes the strength of the body, and renders men more susceptible of disease, and unfit for any service in which vigour or activity is required.' As well might we throw oil into a house, the roof of which was on fire, in order to prevent the flames from extending to its inside, as pour ardent spirits into the stomach, to lessen the effects of a hot sun upon the skin.

"3. Nor do ardent spirits lessen the effects of hard labour upon the body. Look at the horse, with every muscle of his body swelled from morning till night in the plough, or a team: does he make signs for a draught of toddy, or a glass of spirits, to enable him to cleave the ground, or to climb a hill? No. He requires nothing but cool water, and substantial food. There is no nourishment in ardent spirits. The strength they produce in labour, is of a transient nature, and is always followed by a sense of weakness and fatigue.

"But, are there no conditions of the human body in which ardent spirits may be given? I answer, there are. 1st. When the body has been suddenly exhausted of its strength, and a disposition to faintness has been induced. Here, a few spoonfuls, or a wine-glassfull of spirits, with, or without water, may be administered with safety and advantage. In this case, we comply strictly with the advice of Solomon, who restricts the use of strong drink only to him who is ready to perish. 2dly. When the body has been exposed for a long time to wet weather, more especially, if it be combined with cold. Here, a moderate quantity of spirits is not only safe, but highly proper to obviate debility, and to prevent a fever. They will more certainly have those salutary effects, if the feet are at the same time bathed with them, or a

half pint of them poured into the shoes or boots. These, I believe, are the only two cases in which distilled spirits are useful or necessary to persons in health.

"Let it not be said, ardent spirits have become necessary from habit in harvest, and in other seasons of uncommon and arduous labour. The habit is a bad one, and may be easily broken.

"Valetudinarians, especially those who are afflicted with diseases of the stomach and bowels, are very apt to seek relief from ardent spirits. Let such people be cautious how they make use of this dangerous remedy. I have known many men and women of excellent characters and principles, who have been betrayed by occasional doses of gin and brandy, into a love of those liquors; and have afterwards fallen sacrifices to their fatal effects. The different preparations of opium are much more safe and efficacious than distilled cordials of any kind, in flatulent or spasmodic affections of the stomach and bowels. So great is the danger of contracting a love for distilled liquors by accustoming the stomach to their stimulus, that, as few medicines, as possible, should be given in spirituous vehicles, in chronic diseases.

"Some people, from living in countries subject to intermitting fevers, endeavour to fortify themselves against them, by taking two or three wine-glasses of bitters, made with spirits, every day. There is great danger of contracting habits of intemperance from this practice. Besides, this mode of preventing intermittents, is far from being a certain one. A much better security against them, is a teaspoonful of the jesuits bark, taken every morning during a sickly season. If this safe and excellent medicine cannot be had, a gill, or half a pint of a strong watery infusion of centaury, camomile, worm-

wood, or rue, mixed with a little of the calamus of our meadows, may be taken every morning with nearly the same advantage as the jesuits bark. Those persons who live in a sickly country, and cannot procure any of the preventives of autumnal fevers, which have been mentioned, should avoid the morning and evening air; should kindle fires in their houses on damp days, and in cool evenings, throughout the whole summer; and put on winter clothes about the first week in September. The last part of these directions applies only to the inhabitants of the middle States.

" Men who follow professions which require constant exercise of the faculties of their minds, are very apt to seek relief, by the use of ardent spirits, from the fatigue which succeeds great mental exertions. To such persons, it may be a discovery to know, that tea is a much better remedy for that purpose. By its grateful and gentle stimulus, it removes fatigue, restores the excitement of the mind, and invigorates the whole system. I am no advocate for the excessive use of tea. When taken too strong, it is hurtful, especially to the female constitution; but, when taken of a moderate degree of strength, and in moderate quantities, with sugar and cream, or milk, I believe it is, in general, innoxious, and, at all times, to be preferred to ardent spirits, as a cordial for studious men.

" Women have sometimes been led to seek relief from what is called breeding sickness, by the use of ardent spirits. A little gingerbread, or biscuit, taken occasionally, so as to prevent the stomach being empty, is a much better remedy for that disease.

" Smoking and chewing tobacco, by rendering

water and simple liquors insipid to the taste, dispose very much to the stronger stimulus of ardent spirits. The practice of smoking segars has, in every part of our country, been more followed by a general use of brandy and water, as a common drink, more especially by that class of citizens who have not been in the habit of drinking wine, or malt-liquors. The less, therefore, tobacco is used in the above ways, the better.

"No man ever became suddenly a drunkard. It is by gradually accustoming the taste and stomach to ardent spirits, in the forms of grog and toddy, that men have been led to love them in their more destructive mixtures, and in their simple state. Under the impression of this truth, were it possible for me to speak, with a voice so loud as to be heard from the river St. Croix, to the remotest shores of the Missisippi, which bound the territory of the United States, I would say, 'Friends and fellow citizens, avoid the habitual use of those two seducing liquors, whether they be made with brandy, rum, gin, Jamaica spirits, whisky, or what is called cherry-bounce.'

"It has been said, that the disuse of spirits should be gradual: but my observations authorize me to say, that persons who have been addicted to them, should abstain from them suddenly, and entirely. 'Taste not, handle not, touch not,' should be inscribed upon every vessel that contains spirits in the house of a man, who wishes to be cured of habits of intemperance. To obviate, for a while, the debility which arises from the sudden abstraction of the stimulus of spirits, laudanum, or bitters infused in water, should be taken; and, perhaps, a larger quantity of beer or wine, than is consistent with the strict rules of temperate living. By the tem-

porary use of these substitutes for spirits, I have never known the transition to sober habits, to be attended with any bad effects, but often with permanent health of body, and peace of mind.

"But it may be said, if we reject spirits from being a part of our drinks, what liquors shall we substitute in their room? I answer, in the first place,

"1. Simple water. I have known many instances of persons who have followed the most laborious employments for many years, in the open air, and in warm and cold weather, who never drank any thing but water, and enjoyed uninterrupted good health. Dr. Moseley, who resided many years in the West Indies, confirms this remark. 'I aver,' says the Doctor, 'from my own knowledge and custom, as well as the custom and observations of many other people, that those who drink nothing but water, or make it their principal drink, are but little affected by the climate, and can undergo the greatest fatigue without inconvenience, and are never subject to troublesome or dangerous diseases.'

"Persons who are unable to relish this simple beverage of nature, may drink some one, or of all the following liquors in preference to ardent spirits.

"2. Cider. This excellent liquor contains a small quantity of spirit, but so diluted, and blunted by being combined with a large quantity of saccharine matter and water, as to be perfectly wholesome. It sometimes disagrees with persons subject to the rheumatism; but it may be made inoffensive to such people, by extinguishing a red-hot iron in it, or by mixing it with water.

"3. Malt liquors. They contain a good deal

of nourishment: hence, we find, that many of the poor people in Great-Britain endure hard labour with no other food than a quart or three pints of beer, with a few pounds of bread in a day. As it will be difficult to prevent small beer from becoming sour in warm weather, an excellent substitute may be made for it by mixing bottled porter, ale, or strong beer, with an equal quantity of water; or a pleasant beer may be made by adding to a bottle of porter, ten quarts of water, and a pound of brown sugar, or a pint of molasses. After they have been well mixed, pour the liquor into bottles, and place them, loosely corked, in a cool cellar. In two or three days, it will be fit for use. A spoonful of ginger added to the mixture, renders it more lively and agreeable to the taste.

"4. Wines. These fermented liquors are composed of the same ingredients as cider, and are both cordial and nourishing. The peasants of France, who drink them in large quantities, are a sober and healthy body of people. Unlike ardent spirits, which render the temper irritable, wines generally inspire cheerfulness and good humour. It is to be lamented, that the grape has not as yet been sufficiently cultivated in our country, to afford wine for our citizens; but many excellent substitutes may be made for it, from the native fruits of all the States. If two barrels of cider fresh from the press, are boiled into one, and afterwards fermented, and kept for two or three years in a dry cellar, it affords a liquor, which, according to the quality of the apple from which the cider is made, has the taste of Malaga, or Rhenish wine. It affords, when mixed with water, a most agreeable drink in summer. I have taken the liberty of calling it pomona wine. There is an-

other method of making a pleasant wine from the apple, by adding twenty-four gallons of new cider, to three gallons of syrup, made from the expressed juice of sweet apples. When thoroughly fermented, and kept for a few years, it becomes fit for use. The black-berry of our fields, and the rasp-berry, and currant of our gardens, afford, likewise, an agreeable and wholsome wine, when pressed, and mixed with certain proportions of sugar and water, and a little spirit to counteract their disposition to an excessive fermentation.

"5. Molasses and water; also, vinegar and water, sweetened with sugar or molasses, form an agreeable drink in warm weather. It is pleasant and cooling, and tends to keep up those gentle uniform sweats, on which health and life often depend. To such persons as object to the taste of vinegar, sour milk, or butter-milk, or sweet milk, diluted with water, may be given in its stead. I have known the labour of the longest and hottest days in summer, supported by means of these pleasant and wholesome drinks, with great firmness, and ended with scarcely a complaint of fatigue.

"6. The sugar maple affords a thin juice, which has long been used by the farmers in Connecticut, as a cool and refreshing drink in the time of harvest.

"7. Coffee possesses agreeable and exhilirating qualities; and might be used with great advantage to obviate the painful effects of heat, cold, and fatigue upon the body." *Rush.*

Section 3. *Ale or Beer.*

Ale or beer is a compound liquor, prepared in different ways; and is, therefore, of different kinds;

such as porter, spruce-beer, &c.; all of which, if well prepared and fermented, are healthful drink, either alone, or mixed with water; though porter and other strong hop beers, are a bitter, which, if used freely and constantly, may, like other bitters, have a sedative or debilitating effect on the stomach and organs of digestion. It is, therefore, proper and necessary for persons who use such beers constantly, to mix them with water, or change them frequently for it, or some other kind of drink. Next to water, small beer is the most simple and innocent drink. A simple beer, agreeable and salubrious for most people, in hot weather, may be made with sweetened water, and either malt, hops, or bran, with a little anise seed, ginger, or alspice; which may be further improved, by the addition of the boughs, or essence of spruce. The maple juice or molasses, by containing a large portion of acid, readily excites fermentation, and is, therefore, particularly well suited for this purpose.

In country places, an agreeable and a wholesome beer is frequently brewed with part of the above ingredients, with the addition of several bitter herbs, or opening roots, which add to its salubrity in purifying the blood and animal fluids.

A little gentian root, or orange peel, or both, impart an agreeable bitterness to beer, and may be occasionally added; and are thought to preserve it from souring.

It is said, that the quassia bitter has also been lately used with the same intention, and to supply the place of hops. When it turns sour, or becomes vapid, which are sometimes occasioned by thunder, as well as by heat and age, the taste may be revived and corrected by the addition of a little

new beer in a fermenting state; or, of either a little potash, quick-lime, chalk, burnt oyster-shells, or egg-shells.

Beer is more necessary, and peculiarly adapted for the inhabitants of cities and places, where the water is not good; and for persons with whom this disagrees. The different kinds of malt liquors, and beer, are far more nourishing, innocent, and healthy, than the use of ardent or distilled spirits.

Section 4. *Vinegar.*

Vinegar is mostly made of wine and cider: the latter kind is that almost universally used in this country. It is, also, frequently made, in the new settlements, of the juice of the sugar maple, which kind, although, perhaps, not so strong as the others, I have not understood to be less wholesome. A little vinegar added to cold water, obviates its sudden bad effects, when drunk in large quantities; and, if sweetened, it makes a very palatable drink; which is rendered more agreeable and salubrious, by the addition of either a little green burnet, borage, parsley, or sorrel, macerated in it. Vinegar is not enough used in diet, especially in hot seasons and climates; nor are its virtues sufficiently known in inflammatory and putrid diseases. Its hot steams are an excellent means to sweeten and correct stagnant, morbid, or contagious air in the rooms of the sick, and make an agreeable and exhilarating cordial to the patient and attendants. Indeed, instances are not wanting of persons being seemingly preserved from pestilential and malignant disorders by its liberal use. It deserves, however, to be mentioned, that it should, in common with other acids, be used sparingly, or alto-

gether avoided, by persons subject to colic, and other flatulent or spasmodic complaints of the stomach and bowels.

Section 5. *Cider.*

Cider is the common drink of most families in this country, and is generally healthful. It is very suitable for table-drink, especially with animal food; but there is, unquestionably, a great deal more drunk than is really necessary or useful between meals: at which times, I would recommend it mixed with water, to prevent the morbid effects of the latter, and to allay thirst.

I think I have frequently observed great cider-drinkers, somewhat advanced in life, to have a certain tenseness and rigidity of their muscular fibres, which render them peculiarly liable to inflammatory disorders, especially the rheumatism: which is not unexpected, when we recollect, that boiled or strong cider contains a large proportion of inflammable spirit, perhaps, little less than some kinds of wine or distilled spirits. Why then should it be thought surprising, that they are affected with the same diseases, as wine or rum-drinkers?

A draught of stale, well-fermented cider is judged healthy, by many, in the morning fasting; when it has been found useful in preventing or curing the sick head-ach. Indeed, I pronounce it far more innocent, wholesome, and safe, than the custom of drinking rum, brandy, or other ardent spirits, in the morning. Much cider, as well as vinegar, is, however, improper for those who are affected with sour stomachs, and for such as live much on a milk diet; for the acid turns the

milk to a hard coagulum or curd, which is very difficult of digestion; sometimes occasioning colics, or obstinate constipations and pains in the bowels.

Neither cider nor vinegar should be kept in leaden vessels, nor in others glazed with that metal, which becomes corroded by the acid; and has produced colics, and other disorders of the bowels.

Perry is a liquor prepared in like manner from pears; and is equally agreeable and wholesome. Both may be improved in taste and salubrity, by having their pomaceous matter separated from them; which may be done in the manner I have already recommended for purifying impure water, by straining through strata or layers of sand.

Section 6. *Molasses or Sugar.*

Water sweetened with molasses or sugar, makes a safe, healthful, and, to many people, an agreeable drink in hot weather: which may be rendered more so, by the addition of a little vinegar or cider; and, perhaps, by some of the vegetables mentioned in Section 4.

This is the chief, and almost only drink, used by many farmers during their laborious work in harvest and hay time.

Section 7. *Milk.*

I know of no drink more innocent, and better adapted to quench thirst, than milk and water, Milk eaten at mid-day, prevents thirst in the afternoon in hot weather, and during hard labour: but, of the use of milk as food, I shall have occasion to speak more hereafter under that head.

Section 8. *Whey.*

Whey, though not much used as drink, is, perhaps, little inferior to any for salubrity. It is peculiarly wholesome for hard labourers in hot weather, when it can generally be procured in great plenty. It becomes agreeable to most people by use; and it may constitute a considerable part of diet. It is said to have been much used by the ancients; and I would recommend its liberal use to the moderns.

Section 9. *Buttermilk.*

Butter-milk, and bonny-clabber, or sour milk, are, to some, agreeable drink, and no less healthful. They may be sweetened for those who do not like them in their sour state.

Before dismissing the subject of drink, I must observe, that I think, a great deal more is often used than is essentially necessary; and, that much of our thirst, or inclination for drink, is owing to indulgence and habit: for, if people were temperate in eating, and used a sufficient quantity of drink with their food, they would rarely want any between meals; and the less then the better; as much drink immediately after eating, rather retards, than promotes digestion.

It is true, that in hot weather, and during hard labour, when the perspiration is great, much drink is required, and even indispensably necessary; but every person's own experience teaches him, that large draughts are not so effectual to quench thirst, as frequent and smaller ones: and it is peculiarly under those circumstances that the bad consequences of drinking much cold water occur: where-

fore, I have been more particular in pointing out several additions or substitutes for that simple, and generally innocent, though sometimes, by imprudence, fatal beverage.

"We ought to drink only when we are thirsty, and to desist when thirst is quenched: but this is seldom the case because many of our liquors stimulate the palate. Pure water, therefore, is an inestimable beverage, as it will not induce us to drink more than is necessary. Thirst, however, is as good, if not a better guide, than hunger; and he who is accustomed to drink water only, will not easily transgress the measure, if he drink as often as nature calls upon him. But, if we must drink in the intervals of eating, it would be most conducive to digestion to drink water only, and in small quantities; as pure water is more proper during the time of eating, because it agrees with all dishes without exception. Yet, a glass or two of wine, during dinner, particularly for the aged and debilitated, is proper and conducive to digestion.

"Indeed, we ought to begin to drink only after our appetite for food is satisfied, and then it should be done gradually during digestion. This function may be disturbed by large draughts of liquor, which occasion fermentation and flatulency."

Willich.

"The lesser quantity of fermented liquors we accustom ourselves to, the better.

"To abstain from spirits of every kind, however diluted, as much as may be.

"Where mild, well-brewed beer agrees, to keep to it, as beverage.

"Where water does not disagree, to value the

privilege, and continue it. In respect to wine, custom, for the most part, will decide.

"The less the excess in quantity, the more consistent with health, and long life. And people, especially in the fore part of life, cannot be too solicitous to shun the first temptations to the love of spirituous liquors." *Fothergill.*

"The drinks, in different countries, are different. Those used among us, are water, malt-liquors, wine, cider, brandy, tea, &c. The first drinks of mankind were certainly water and milk; but luxury soon introduced the art of preparing intoxicating and inebriating drinks, out of vegetables. The vine gave the first of these liquors; after this, wheat, barley, millet, oats, rice, apples, pears, and pomegranates; and, after these, the juices drained from the pine, sycamore, and maple, were brought to this use: in latter times, roots, berries, and the pith of the sugar-cane, have been employed for the same purposes. But, before the use of the other things here mentioned, the vinous liquor made of honey and water, was in the very highest estimation. The bees were natural purveyors, and their stores were one of the first delicacies, probably, of the human race. The people who have studied the human frame to most purpose, all agree, that among the strong drinks, spirits and wine are the most pernicious; and that good water, milk, beer, and cider, are greatly preferable to them; none of them bringing on the variety of disorders, to which immoderate drinkers of wine and spirits are subject; such as decay of sight, trembling of the limbs, &c. Water, Dr. Cheyne observes, is the only simple fluid fitted for diluting, moistening, and cooling—the only ends of drink appointed by nature; and happy had it been for

the race of mankind, had other mixed and artificial liquors never been invented.

"Water alone is sufficient and effectual for all the purposes of human wants in drink. Strong liquors were never designed for common use. They were formerly kept here in England, as other medicines are, in apothecaries' shops, and prescribed by physicians, as they do diascordium and Venice treacle, to refresh the weary, strengthen the weak, and raise the low-spirited. The effect of the ordinary use of wine and spirituous liquors, as natural causes will always produce their effects, is, to inflame the blood into gout, stone, and rheumatism, fevers, pleurisies, &c.; to dry up the juices, and scorch and shrivel the solids. Those whose appetite and digestion are good and entire, never want strong liquors to supply them with spirits: such spirits are too volatile and fugitive, for any solid or useful purposes of life. Two ounces of flesh meat, well digested, beget a greater stock of more durable and useful spirits, than ten times as much strong liquors.

"All strong liquors are as hard to digest, and require as much labour of the concoctive powers, as strong food itself. Water is the only universal dissolvent, or menstruum, and the most certain diluter of all bodies proper for food. There are a great many spirituous liquors which not only will not dissolve, but which will harden, and make more indigestible certain parts, especially the salts of bodies, wherein their active qualities, that is, those which can do most harm to human constitutions, consist. And we have known persons of tender constitutions, who could neither eat, nor digest upon drinking wine, who, by drinking at meals common water, warmed, have recovered

their appetites and digestion; and have thriven, and grown plump. It is true, strong liquors, by their heat and stimulation on the organs of concoction, by increasing the velocity of the motion of the fluids, and thereby quickening the other animal functions, will carry off the load that lies upon the stomach, with more present cheerfulness. But then, beside the future damages of such a quantity of wine to the stomach, and the fluids, by its heat, and inflammation, the food is hurried into the habit unconcocted, and lays a foundation for a fever, a fit of the colic, or some chronical disease. *Essay on Health, &c.*

"With respect to fermented liquors, which are commonly used, it may be observed, that those which are too strong hurt digestion, and are so far from strengthening the body, that they weaken and relax it. They keep up a constant fever, which exhausts the spirits, heats and inflames the blood, disposes to numberless diseases, and occasions a premature old age. But fermented liquors may be too weak, as well as too strong: these must either be drunk new, before the fermentation is over, and in this case will generate air in the bowels, and occasion flatulencies; or, they soon become stale, sour the stomach, and injure digestion. On this account, all malt-liquors, ciders, &c. should be sufficiently strong to keep till they are ripe, and then they should be used; and neither sooner nor later. Liquors that are adulterated with a mixture of ingredients of the opiate kind, which are poisonous in their quality, by those who make them for sale, hurt the nerves, relax and weaken the stomach, and spoil its digestive powers.

"Fermented liquors are more or less poignant to the taste, and better calculated to quench thirst

Their acescency sometimes promotes the disease of acescency, by increasing that of vegetables, acting as a ferment, and so producing flatulency, purging, cholera, &c.: so that, with vegetable aliment, as little drink is necessary, the most innocent is pure water; and it is only with animal food that fermented liquors are necessary. In warmer climates, fermentatæ would seem necessary to obviate alkalescency and heat. But it should be considered, that though fermented liquors contain an acid, yet they also contain alcohol; which, though it adds stimulus to the stomach, yet is extremely hurtful in the warmer climates, and wherever alkalescency prevails in the system. Nature, in these climates, has given men an appetite for water impregnated with acid fruits, *e. g.* sherbet; but the use of this needs caution, as in these countries, they are apt to shun animal food, using too much of the vegetable, and often thus causing dangerous refrigerations, choleras, diarrhœas, &c."

Hall's Encyclop.

CHAPTER III.

FOOD.

FOOD is, undoubtedly, a matter of no little importance in preserving health; and, upon a due attention to it, the prevention of diseases, in great measure, depends. Indeed, it has been questioned, whether more people have not suffered by immoderate and imprudent eating, than by excessive drinking? Without taking upon me to decide, I cannot help expressing my fears of the truth of the former part of the question: but, be this as it may, the subject is of too great moment to escape our strict attention and observation, especially in early life; for, then, habits are often established, which become very difficult to break through in more advanced age.

Food, as well as drink, was doubtless given us by the great Creator to use, but not to abuse; therefore, for our nourishment and support: but, how sorrowfully is the use of the former, as well as of the latter, perverted! The end of eating is to nourish and sustain our bodies, more than to gratify our appetites: therefore, as health is one of the greatest blessings in this life, let us study to

answer the former, rather than merely to fulfil the latter.

Every person's experience teaches him; or, with attention, may teach him, that his health and ease, in great measure, depend on a due quantity and quality of his drink and food: of the former, I have already spoken; and it is the latter I am now to consider.

It is an axiom of no little importance, which I wish to be strongly impressed on the minds of all, 'That every person's health depends much on the quantity and quality of his diet.' Now, it may be asked, what are this quantity and quality? I answer, every person's own experience must, in great measure, determine; only with this injunction, always to stop at, or rather before, the first sensation of satiety or gratification: which is necessary, both in drink and food; but, in general, more essentially so in the latter, than in the former.

It is most conducive to health, to eat not only sparingly, but at early, regular, and set times; and to avoid repasts or piece-meals, as much as possible: by observing which rules, a person is sure to enjoy a clear head, an easy stomach, and a good digestion, and rarely to want an appetite when in health. But, owing to a neglect of these, we not unfrequently see people complaining of head-ach, pain or uneasiness in the stomach, eructations, and other symptoms of indigestion; and applying for medical assistance; when the physician, with the whole materia medica, is not able to effect a cure. The reason is, medicine is not so much wanting, as attention to diet; particularly, in choosing a suitable kind, and in being careful not to exceed in quantity,

joined with proper exercise. Gormandizers, no doubt, suffer more by their excesses, than the abstemious and temperate do, by their cravings of appetite.

In cold climates and seasons, the appetite for solid food is generally keener than in hot. For that reason, in the former, persons of good stomachs and feeble constitutions ought to be more particularly careful not to exceed in quantity; but, the digestion being, in general, stronger and better performed, prevents, in some measure, the uneasy and oppressive effects, that would otherwise be felt from eating full meals.

The usual symptoms and effects of a full meal, or excessive eating, are, dulness, laziness, yawning, sleepiness, a sense of load or oppression at the stomach, a quickness of the pulse, and slight fever; which last is, the almost certain consequence of eating at all times; and occurs during the passage and change of the chyle into the blood. Hence, immoderate eaters may be said, almost always, to have a fever: in short, they are subject to much the same kinds of complicated and incurable disorders, as excessive drinkers.

When a person has eaten to excess, he ought not to lie down immediately, but move gently about, and use some of the means recommended for drinking too much cold water; and, he should take a draught of cold water acidulated with elixir of vitriol, or juice of lemons.

This explains, why there is a greater number of diseases, and those more incurable, in cities than in countries; and, why invalids are longer in recovering in the former, than in the latter.

It may be said, that convalescents, or persons who have been long sick, and are reduced low,

and who have a good appetite, require much food: it is true; but let such be reminded, that their cravings are frequently false, owing to an acid or morbid state of the juices in the stomach, which prompts them to eat more than nature, or their constitutions require; that it is safer to take a little light food frequently, than much at a time; that, even in health, overeating corrupts the juices, and injures the constitution more than it nourishes the body; and, that a keen appetite, without a strong digestion, is often worse than none. Persons much fatigued, and after long fasting, ought particularly to avoid full meals, and all kinds of hard, fat, and indigestible food.

One thing, common with luxurious eaters, however, deserves approbation; that is, the long time used in eating. If people generally took much more time and pains in chewing their food, it would contribute greatly to a speedy easy digestion; and, consequently, to a healthful constitution. The oppressive and injurious effects of immoderate eating, especially of highly seasoned food, and poignant sauces, as well as of excessive drinking, are particularly felt on the mind, as well as on the body. Hence, persons addicted to the former intemperance, as well as the latter, rarely possess that liveliness of spirits, quickness of apprehension, activity of thought, and acuteness of judgment, which the temperate and abstemious generally enjoy.

What I have hitherto said, relates chiefly to quantity. It may now be expected, that I should give my opinion on the quality and different kinds of food. To enter minutely into every article of nourishment, would require a volume, which would be beyond my present bounds: wherefore,

I shall confine myself mostly to that of this country; and particularly in exhibiting a contrast or comparative view between the influence of the food of city and country.

From history we learn, that different nations subsist on a great variety of food, and very diverse from each other: for instance, some principally on fish; some on rice and other vegetables; some on roots and the barks of trees; some on the bones of animals; some much on animal or vegetable oils; and others on food, partly animal and partly vegetable; which last includes the general diet of this country: and nearly the same variety may be found in drinks; and yet all, in the general, perhaps healthy, or not subject to disorders, that may be imputed to the nature of their diet: which shows, that the human constitution and organs of digestion possess a remarkable power of accommodating themselves, by degrees, to every kind of food; hence, few diseases are occasioned by the kind or quality, but many by the quantity of aliment. Indeed, it is doubted by some, whether more people have not been destroyed by excess of diet, than ever have been by famine. And there is no cause to disbelieve the adage; "That temperance is the best physic."

Moderation and temperance have, from their importance, been not improperly called, "The golden means of preserving health."

A proper attention to diet, as well as to pure air, is no less important and necessary in the cure, than in the prevention of diseases, and in the preservation of health in general. Hence, many disorders prove incurable by medicine, without a well regulated diet and regimen: to which, those of a

chronic nature often yield, more than to the whole materia medica.

From the variety of aliments used, I scarcely know where to begin: but, as all are comprised in three meals, I shall consider them in that order, namely, breakfast, dinner, and supper.

Previous, however, to entering on the particular articles of each meal, I shall adduce some apposite extracts on diet in general.

"Nothing is of so much consequence to invalids, and to the more delicate of both sexes, as attention to quantity. There are many people who seem to be possessed of such powers of digestion, as to be under no restraints on that account, and who never feel themselves incommoded, either with quantity, or the most heterogeneous qualities of their food. They rise from the most plentiful, mixed, and rich repasts, without any kind of apparent uneasiness. But this is not the case with the generality: they are affected with uneasiness, some in one way, some in another, by the unnatural load. And how often do we hear such complaining of the ill effects of this or that particular kind of diet, when, perhaps, their sufferings arise from the quantity of all, rather than the disagreement of any.

"It demands attention to observe that just medium, and no less resolution to keep to it, which the stomach invariably points out in respect to quantity. The how much must be determined by every individual; and those who are happy enough to abstain at the first sensation of satiety, have made great progress in the art of maintaining such a command of appetite, as, under most chronic indispositions, is one of the greatest aids of recovery; and, in health, is one of the surest preservatives against them.

"It is a doctrine, however trite and familiar, which cannot be too strongly inculcated; as a neglect of this attention to the quantity of food proportioned to the necessity of each individual, is, sooner or later, followed with the most serious consequences. To the strong and robust, inflammatory diseases happen, and all such as proceed from plenitude and acrimony combined, as the gout, and many other chronic indispositions. To the more tender and delicate, it is the parent of a numerous progeny of distempers, affecting both body and mind. There is scarcely a malady that can be named, which either does not originate from this neglect of diet, or is not increased by it, till the disease at length bids defiance, even to temperance itself, and all prescription.

"What renders this attention to invalids of this order, still the more necessary, is, that they are often subject to a false appetite; to a craving that does not arise from the demands of health, but from the morbid piquancy of the juices in the stomach, which prompts them to eat more, and more frequently than nature requires. Whence, it happens, that such people are often disposed to take in much more than can be digested; to devour their food, rather than to eat it; by which means, their sufferings are increased; the disease gains ground; defeats every purpose of the physician; and leads them into some permanent and incurable malady.

"And should the patients have admitted an opinion, (and such an opinion occurs but too often) that their recovery will be aided by taking in a greater share of food, their misfortune is complete. These are not ideal traits in the history of the sick; they are known to be but too true by every phy-

sician of observation: and they cannot be mentioned too often, or with too much fervency, for the sake of those who are liable to become the victims of appetite or inattention.

"Early habits of self-command are of the utmost benefit to all; and even those who do not feel any immediate distress from the utmost repletion at present, would find it their interest to be moderate and discreet.

"The effects of improper conduct, in respect to those things which now constitute our breakfasts, are of little consequence, compared with those which arise from the well-covered table at noon. The indulgences supply but very few materials for destruction. The repeated excesses at dinner are serious affairs. It has been thought, that more people suffered by hard drinking, than immoderate eating. My observation leads me to take the opposite side. At present, indeed, the former practice is generally banished to the vulgar; but whilst it prevailed to the utmost, it seems to me, that more were injured by excess of diet, than of drinking.

"The Author of nature has so formed us, and constructed the organs of digestion, that we can gradually accommodate ourselves to every species of aliment; live on rice, on vegetables, on animal food solely, or mixed with vegetables, without suffering injury. No kind of food hurts us; we are capable of being accustomed to every thing; but this is not the case in regard to quantity. Nature, by degrees, may be accustomed to subdue and change into nutriment almost every part of the creation that is produced; but, to quantity she yields: if there is not sufficient, decay ensues; if too much is used, fatal oppression.

"Though I think the quantity of food is a matter principally to be regarded, yet the quality is not a matter of indifference.

"As, on the due performance of digestion, depends much of our health, ease, and prospect of longevity; so, we ought most studiously to avoid every thing that has a probable chance of interrupting it." *Fothergill.*

"In the consumption of food, we are liable to commit errors, both as to its quantity and quality. The error in the quantity, however, is generally the most detrimental. A small portion of food can be better digested, and more easily changed into chyle, or that alimentary fluid from which the blood derives its origin, than a large portion, which injures the coats of the stomach, and prevents them from exerting their force. Hence, every satiety, or superfluity, is noxious.

"It is in infancy and early age, that the foundation is laid for the many diseases arising from indigestion, which are now found in almost every family. If children are fed immoderately, and beyond the real wants of nature, the first passages become too much distended, and their stomach, by degrees, acquires an unnatural craving for food, which must be satisfied, whatever be the consequence. These excessive supplies not only are unnecessary, but produce the most serious and fatal disorders.

"It would be a fruitless and impracticable attempt, to lay down fixed rules, by which the respective salubrity, or perniciousness of every species of aliment might be determined, in its application to the individual. It has been before observed, that such rules do not exist in nature; and that the relative state and condition of the

person, time, and circumstances, must serve as our guide. Hence, it may be considered as a general rule, that all incongruous mixtures and compositions; for instance, milk and vinegar, or other acids, or milk and spirits, are hurtful, by generating an acid and acrid whey in the stomach, and, at the same time, producing an indigestible coagulated mass.

"A much greater number of diseases originate, upon the whole, from irregularities in eating, than in drinking; and, in the latter respect, we commit more frequent errors with regard to quantity than quality: otherwise, the heterogeneous mixture of provisions, with which we load our stomachs, would disagree with all.

"The general rule, then, is, to eat as much as is necessary to supply the waste suffered by the body: if we exceed this measure, we produce too much blood; a circumstance as detrimental, though not so dangerous to life, as that of having too little. If we were never to trespass the due limits of temperance, our natural appetite would be able accurately to determine how much food we may consume without diminishing our vivacity. But, from the usual physical education of children, this can scarcely be expected in adults. We ought, therefore, to pay strict attention to the state of those intestines which serve to prepare the alimentary fluid; and, when these are in a relaxed or diseased state, we should instantly begin to be more moderate in eating.

"If, after dinner, we feel ourselves as cheerful as before it, we may be assured, that we have taken a dietetical meal: for, if the proper measure be exceeded, torpor and relaxation will be the necessary consequence: our faculty of digestion

will be impaired, and a variety of complaints gradually induced.

"The stomach being too much distended by frequent exertions, will not rest satisfied with the former quantity of food: its avidity will increase with indulgence in excess; and temperance alone can reduce it to its natural state, and restore its elasticity. Fulness of blood, and corpulency, are the disagreeable effects of gluttony, which progressively relaxes the stomach, and punishes the offender with head-ach, fever, pain in the bowels, diarrhœa, and other disorders.

"The more suddenly this expansion takes place, the more forcibly and dangerously it affects the stomach; and its fibres being too much extended, are the more sensible of the subsequent relaxation. Slow eating, therefore, preserves the fibres in a due state of elasticity. Hence, to eat slowly, is the first maxim in dieteties: the stomach suffering, in this case, a very gradual distention, as the food has sufficient time to be duly prepared by mastication. He who observes this simple rule, will feel himself satisfied only after he has received a due proportion of aliment. But he who swallows his food too quickly, and before it is perfectly chewed, will imagine he has eaten enough, when the unmasticated provisions occasion a sense of pressure on the sides of the stomach. The teeth are designed by nature to grind our food, and to mix it with our saliva, produced by innumerable glands, and destined to promote its solution.

"The most simple dishes are the most nourishing. The multiplied combination of substances, though they may please the palate, are not conducive to health. All subtances which contain much jelly, whether animal or vegetable, are nourishing;

for this alone affords nutriment; and the hard, watery, and saline particles of food cannot be assimilated or converted into chyle. Nourishing substances would, indeed, be more conformable to nature; but, as our appetite generally incites us to eat more than is necessary, we should acquire too much alimentary matter, and become too full of blood, if we were to choose only such articles of food as contain a great quantity of jelly."

Willich.

Next to air, food is the most necessary thing for the preservation of our bodies: and, as on the choice thereof, our health greatly depends, it is of great importance to understand, in general, what is the properest for our nourishment; and, in particular deviations from health, what is best adapted to restore us. Our blood and juices naturally incline to become putrid and acrimonious: fresh chyle, duly received, prevents this destructive tendency, and preserves in them that mild state which alone consists with health. An animal diet affords the most of this bland nutritious mucilage: watery fluids dilute the too gross parts, and carry off what is become unfit for use. It is only the small portion of jelly which is separated from the farinaceous parts of vegetables, that, after being much elaborated, is converted into the animal nature; yet, the use of vegetables prevents both repletion, and a too great tendency to a putrescent acrimony of the blood. In hot climates, as well as against the constitutional heat of particular persons, vegetables are demanded in the largest portion: animal substances afford the highest relish while our appetite continues; but will sate the appetite before the stomach is duly filled. Vegetables may be eaten after either flesh or fish: few

herbs or fruits satiate so much as that the stomach may not be filled with them, when it is already satisfied with flesh or fish; whence, it may be observed, that no diet which is very nourishing, can be eat to fulness, because its nutritious parts are oily and satiating.

"Health depends almost wholly on a proper crasis of the blood; and to preserve this, a mixture of vegetables, in some degree, is always required; for, a loathing is soon the consequence of animal food alone: hot acrid habits, too, receive from milk and vegetables the needful for correcting their excesses; but, in cold, pituitous, and nervous habits, who want most nourishment from least digestion, and from the smallest quantity of food, animal diet is to be used more freely.

"Thus much being offered as general principles, with respect to the matter and quality of our aliment, the valetudinarian may easily regulate his diet with some advantage to himself, by an attention to the few ensuing particulars. In winter, eat freely, but drink sparingly: roast meat is to be preferred, and what is drunk, should be stronger than at other seasons. In summer, let thirst determine the quantity to be drunk: cold stomachs never require much: boiled meats and vegetables, if not otherwise contraindicated, may now be more freely used. Lax habits require the winter's diet to be continued all the year; and rigid ones should be confined to that of summer. Fat people should fast at times, but the lean should never do so. Those who are troubled with eructations occasioned by their food, should drink but little, and use some unaccustomed exercise. The thirsty should drink freely, but eat sparingly. In general, let moderation be observed; and, though no dinner

hath been had, a light supper is, at all times, to be preferred. After very high seasoned meats, a glass of water acidulated with the acid elixir of vitriol, or, in very weak stomachs, the sweet elixir of vitriol, is far more assistant to the work of digestion, than the common method of taking brandy.

"Thus, when the body is too full, nature causes evacuations through some of the outlets: and, for this reason it is, that diseases from inanition are generally more dangerous than from repletion; because, we can more expeditiously diminish, than increase the juices of the body. Upon the same account, also, though temperance be beneficial to all men, the ancient physicians advised persons in good health, and their own masters, to indulge a little now and then, by eating and drinking more plentifully than usual. But, of the two, intemperance in drinking is safer than in eating: and, if a person has committed excess in the latter, cold water drunk upon a full stomach will help digestion; to which it will be of service to add lemon juice, or elixir of vitriol. If he has eaten high seasoned things, rich sauces, &c. then let him sit up for some little time, and afterwards sleep. But, if a man happen to be obliged to fast, he ought to avoid all laborious work. From satiety, it is not proper to pass directly to sharp hunger, nor from hunger to satiety: neither will it be safe to indulge absolute rest, immediately after excessive labour, nor suddenly to fall to hard work after long idleness. In a word, therefore, all changes, in the way of living, should be made by degrees.

"The softer and milder kinds of aliment are proper for children; and, for youth, the stronger. Old people ought to lessen the quantity of their food, and increase that of their drink: but yet

some allowance is to be made for custom, especially in the colder climates like ours; for, as in these, the appetite is keener, so is the digestion better performed.

"Though foods and drink of the most simple kinds, are allowed to be the best calculated for supporting the body in health, yet, it can hardly be doubted, but variety may be safely indulged occasionally, provided men would restrain their appetites within the bounds of temperance; for, bountiful nature cannot be supposed to have poured forth such a rich profusion of provisions, merely to tantalize the human species, without attributing to her the part of a cruel stepdame, instead of that of the kind and indulgent parent. Besides, we find, that by the wonderful powers of the digestive organs, a variety of animal and vegetable substances, of very discordant principles, are happily assimilated into one bland, homogeneous chyle; therefore, it seems natural to distrust those cynical writers, who would rigidly confine mankind to one simple dish, and their drink to the mere water of the brook. Nature, it is true, has pointed out that mild insipid fluid as the universal diluent, and therefore most admirably adapted for our daily beverage. But experience has equally proved, that vinous and spirituous liquors, on certain occasions, are no less salutary and beneficial, whether it be to support strength against sickness or bodily fatigue, or to exhilarate the mind, under the pressure of heavy misfortunes. But, alas! what nature meant for innocent and useful cordials, to be used only occasionally, and according to the direction of reason, custom and caprice have, by degrees, rendered habitual to the human frame, and liable to the most enormous and destructive abuses.

Hence it may be justly doubted, whether gluttony and intemperance have not depopulated the world more, than even the sword, pestilence, and famine. True, therefore, is the old maxim, 'Modus utendi ex veneno facit medicamentum, ex medicamento venenum."* *Encyclop. Britann.*

"It is, indeed, true, that the generality of mankind do not perceive the differences of diet very nicely; because, man is of a nature suited to a great variety of functions, and, therefore, to a great variety of states and circumstances; and, among the rest, to a great variety of aliments.

"To this, the human economy is particularly well suited; and the common saying of 'Sanis omnia sana,' to a certain extent, is well founded; but this does not supersede all attention to the choice of aliments. Men are still of different constitutions, with respect to their powers of digestion; nor less different, with respect to the irritability of their system; and are, consequently, variously affected by the same aliments; and this so much as to have produced the vulgar observation, that, 'One man's meat is another man's poison.' This, indeed, does not apply in many cases, and only very remarkably in the cases of the idiosyncrasies, which occur in many particular persons.

"With respect to the most part of mankind, the different effects of aliment are not very remarkable; and though some excesses may take place, they are often transitory and unheeded: but it would be of consequence for men to know, that repetition may, in time, render these effects considerable and dangerous. It would be well, therefore, that mankind were aware of the tendency

* The mode of use makes a medicine of a poison, and a poison of a medicine.

which every kind of diet has to produce effects either immediately, or after repetition, unfavourable to health. It would, however, be difficult to give to the bulk of mankind the necessary instruction on this subject, and it would hardly be necessary to render it very universal, as it is not in many cases, and only in particular persons, that diseases arise from errors in diet; but it is absolutely necessary that physicians, who have the whole of mankind as objects of their attention, should study this matter: without which, they cannot either perceive the causes of diseases, or direct the means of obviating them. In this business, however, I have often found physicians very deficient, from their great ignorance of the nature of aliments, and of the principles which should lead to the proper and necessary distinction of them."

Cullen.

Section 1. *Breakfast.*

The food generally eaten at this meal, consists mostly of bread and butter, and either milk, tea, coffee, or chocolate.

Among the great variety of aliments used in diet, none is more general, necessary, and useful than bread. Even nations which have no farinaceous substances, make something in imitation, or as a substitute for it.

The most common bread, eaten in this country, is made either of wheat, rye, indian corn, or buckwheat; or of a mixture of some of these: all of which, when properly prepared, are nutritious and wholesome.

Wheaten bread is agreeable to most people, and generally sits easy on the stomach; but its constant use is thought to induce costiveness in some:

which effect may be prevented by leaving a part of the bran with the flour, or by mixing it with rye; which last is not so palatable to all, being rather more apt to sour on the stomach, and to excite heartburn in certain constitutions; but it is more of a laxative nature; and, therefore, better suited for costive habits, either alone, or mixed with wheat: which mixture constitutes what is, in some parts of England, called meslin; a kind of bread said to be the best of all others for keeping the body soluble.

Bread made wholly of rye, on account of its disposition to acescency, fermentation, and flatulency, may not be so well adapted for persons of choleric temperaments, and those afflicted with dyspeptic, hypochondriac, and hysteric symptoms. But, for the same reason, it may be the best bread to prevent or cure the scurvy. There is a diseased state of this kind of grain, called spurred or horned rye, (by the French, ergot), which has proved deleterious or morbid, in some cases; but I never saw, nor heard of its effects being observed in this country.

That made of maize, or indian corn, appears to agree well with most people who like it. It is mostly used in the eastern States, and in other countries where there does not much wheat grow. It is well known, that the meal of this kind of grain does not ferment and raise, even with yeast or leaven, like the flour of wheat and rye, into a light spungy bread; but it may be mixed with either or both of them, when it makes them palatable, and keeps them moist a considerable time.

Buckwheat has lately come into very general use, in the winter season, both in city and country; but, being somewhat liable to an acescent

fermentation in the stomach, it does not agree well with all constitutions. It is rarely used in a cold state, like other bread; but, when properly made, and baked into cakes on a griddle, it is excellent eating, whilst warm.

The grain should, however, previously to being ground, be freed from the dust and grit on it. It is supposed, that its use occasions itching and cutaneous eruptions; which supposition is, I think, not wholly without foundation. It is not so generally eaten in warm, as in cold weather; nor is it thought so wholesome for constant use, especially in the former season, as other bread.

Some think that buckwheat is improved by adding to it a portion of fine indian meal; of which last alone a batter is sometimes made, and baked in like manner.

The principal reason of the unwholesomeness of bread, is its being sour, or not sufficiently fermented, or baked.

It is conducive to health, to intermix a large proportion of bread with our food, particularly with flesh.

Hot bread is not so healthy as cold, being more indigestible; and very apt to clog and oppress many people's stomachs: indeed, there have been instances of persons being thrown into violent colics; and of some who have been thought to have lost their lives, by eating hot bread, rolls, or short-cakes, with a large portion of stale or rancid butter.

Stale bread is, also, thought to be more wholesome than that which is newly baked. All kinds of bread, rolls, and cakes, containing much shortening; and the different kinds of unfermented pastry, are very difficult of digestion; and, if

eaten hot, particularly offensive to certain constitutions. The crust of bread is the most digestible, but the crumb the most nutritious part of it.

"New-baked bread always contains much of an indigestible paste; which is remedied, either by allowing it to dry for two or three days, or by toasting it. Stale bread, in every respect, deserves the preference: and persons troubled with flatulency, cramp of the stomach, and indigestion, should not, upon any account, eat new bread, and still less, hot rolls and butter. Indeed, all pastry whatever is unwholesome, especially when hot."

Willich.

"There is no error in this country more dangerous, or more common, than the neglect of bread; for it is the safest of vegetable aliment, and the best corrector of animal food; and, by a large proportion of this alone, its bad consequences, when used in an hypochondriac state, have been obviated." *Encyclop. Britann.*

Butter spread on bread in a cold state, or simply melted, is an innocent, nutritious, and, for most people, a wholesome part of diet; but, when used very hot, fried, or in the least burnt, is far less so; being very oppressive and unfriendly to the stomach and digestion, not unfrequently impairing that faculty, and occasioning giddiness, head-ach, and sickness at the stomach; symptoms often, though erroneously, imputed to other causes.

It should always be chosen fresh and sweet, as that which is stale or rancid, proves sometimes particularly disagreeable and offensive to certain stomachs, especially in hot climates and seasons.

"From many incontestible proofs, that butter, in considerable quantities, is injurious, it is less used in many families. It is found, by many, to

be very difficult of digestion, especially when toasted before the fire, or fried, as well as in sauces. Many people, apparently robust, and whose organs of digestion are strong, often find themselves much disordered by large quantities of butter. Nothing more speedily and effectually gives the sick head-ach, and sometimes within a very few hours. After breakfast, if much toast and butter have been used, it begins with a singular kind of glimmering in the sight; objects swiftly changing their apparent position, surrounded with luminous angles, like those of a fortification. Giddiness comes on, head-ach, and sickness. An emetic and warm water soon wash off the offending matter, and remove these disorders. These are circumstances that often happen to people who are inattentive to the quantity of butter they eat at breakfast; and who are very often attempted to be cured by very different remedies, and improper ones.

"A moderate quantity of fresh butter, with bread exposed as little to the fire as possible, or not at all, but used cold, appears to me to be wholesome: it is capable of becoming, with the other aliments, as soft and inoffensive chyle, perhaps, as any part of diet." *Fothergill.*

"As a wholesome aliment, butter should be fresh and free from rancidity, and not fried or burnt; otherwise, the acid being disengaged by age and fermentation, as well as by fire, it will disorder digestion, render it difficult and painful, excite acrid empyreumatic belchings, and introduce much acrimony into the blood."

Hall's Encyclop.

Milk is a most valuable and healthy kind of diet, not only in the morning, but at other times of the day; but custom has, in great measure, bartered

its use for the debilitating and less salutary articles of tea, coffee, &c.

Milk, indeed, does not agree with all constitutions; but this is to be attributed, in great measure, to its not being used constantly in early life; for almost every person, with whom milk disagrees, is disordered; that is, his stomach and organs of digestion are in a morbid or debilitated state, or contain a superabundant quantity of acid; both of which are generally combined, and are to be removed by a course of alkaline salts, or absorbent earths, with bitters, particularly the quassia and colombo root. In those persons, the acid in the stomach coagulates the milk, forming a hard indigestible curd, which frequently occasions colic pains, and other symptoms of indigestion, usually occurring in such cases; agreeably to what I have already observed, that much vinegar and cider, and other sour liquors, are improper for persons who live altogether upon a milk diet.

This property in milk may, sometimes, be prevented by boiling it, or by mixing with it either a little chalk, magnesia, limewater, castile soap, spirits of hartshorn, ley of tartar, the prepared powder of oyster-shells, or that of egg-shells.

Milk seems pointed out by nature in early life for the diet of man; for the new-born infant immediately applies to the breast, and lives upon it: and yet we sometimes hear adults say, that it is too heavy and indigestible for their stomachs: which may, perhaps, be the case; but it is owing, in great measure, to their not being inured to it whilst young, and to their stomachs' being habituated to, and debilitated by, hot enervating liquors, such as tea, coffee, &c.

It has been questioned, whether milk, in a crude

or boiled state, is most laxative and healthsome? There is no certain invariable difference or preference. I think, however, that, for most persons in perfect health, raw milk is sufficiently well adapted; but, for valetudinarians and convalescents, and for those with whom it is apt to disagree, it may be safest and best to boil it.

It is procured from various animals, and is, therefore, of different kinds; but it will not be expected, that I shall enter into a distinct consideration of them here: I shall, therefore, only observe, that cows' milk is the kind generally used in this country; and that this has been found, by experiments, to contain a much larger proportion of unctuous or nutritious matter, than women's milk: which points out the advantage of early ablactation or weaning of children; and which, there is frequent occasion to observe, especially when the constitution and health of the mother or nurse are not good, and when the milk disagrees with the child. And they would generally be more healthy and strong, if weaned under a year old, than over it.

Among the advantages of milk as an article of diet, deserves to be ranked as not the least, its peculiar excellence, both for children, and for mothers and nurses who suckle; for whom it exceeds, and answers the purpose of almost all other kinds of nourishment.

Although milk appears, at first view, as it flows from the breasts or udders of animals, to be one simple, homogeneous fluid, yet it may, by chymical analysis, and domestic processes, be decompounded and separated into various parts. The former falls not within my present province, it being the latter only which I am to consider here.

I shall, therefore, only observe, 1st, that milk, by standing, throws up to its surface an unctuous or oily part, called cream, which may, by agitation, be converted or changed into butter, and a portion of remaining sour milk: and, 2d, that, by the admixture of rennet, milk may be changed into a curd, of which cheese is made; and into a watery part or whey.

Cheese, when properly made and preserved, is wholesome for those who like it, and with whom it agrees. Some particular constitutions are, however, found, with whom it disagrees; and such should, therefore, avoid it. Old cheese is thought to be useful in assisting digestion, when eaten with hard insoluble food, or soon after it: and it has been found particularly so, in relieving the bad effects of eating much green or sour fruit, such as cherries, plums, &c.

The liberal use of both milk and cheese is observed, in some constitutions, to occasion costiveness; which, those who use them and find to be the case, should guard against, either by avoiding them, or by some of the means which I shall point out for that purpose in a succeeding chapter.

Whey I have already mentioned as drink; and it contains considerable nourishment; and is particularly serviceable in hectic, nephritic, and calculous, or gravelly disorders; and, in other complaints of the urinary passages.

Milk being of an intermediate nature betwixt vegetable and animal food, is particularly adapted to those constitutions and states of convalescence, in which the former disagrees, and the latter is inadmissible; and, in all cases, in which irritation is to be avoided, as in hectic fever, &c.

A milk diet, joined with exercise, and abstinence

from animal food, and from wine, may not only be considered as a preventive, but an almost certain cure for the gout, and many other inflammatory disorders, especially, if begun early, and faithfully persevered in. Milk, with fresh vegetables and fruits, has been found no less effectual both in preventing and curing the sea-scurvy, and other diseases occasioned by a putrescent state of the fluids.

"It is, however, improper to eat acid substances together with milk, as this mass would occasion fermentation and corruption; while, on the contrary, the natural coagulation is only a separation of the constituent parts, not a transition of this mild fluid into the state of acid fermentation; for this is prevented by the saponaceous digestive liquors, though the milk itself be coagulated."

Willich.

"Milk approaches to the nature of vegetable aliment, but is not capable of its noxious vinous fermentation, and, therefore, has an advantage over it; neither from this quality, like animal food, is it heating in the stomach, and productive of fever; though, at the same time, from its quantity of coagulable matter, it is more nourishing than vegetables. Dr. Cullen observes, 'That milk is almost suited to all temperaments; and it is even so to stomachs disposed to acescency, more than those substances which have undergone the vinous fermentation; nay, it even cures the heartburn, checks vinous fermentation, and precipitates the lees, when, by renewal of fermentation, the wine happens to be fouled. It, therefore, very properly accompanies a great deal of vegetable aliment, although, sometimes, its acescency is troublesome, either from a large portion taken in, or from the

degree of it; for, according to certain unaccountable circumstances, different acids are formed in the stomach in different states of the body; in a healthy body, *e. g.* a mild one; in the hypochondriac disease, one sometimes as corrosive as the fossil acid.' It has been imagined, that a rennet is to be found in the stomachs of all animals, which causes coagulation of milk; but, to Dr. Cullen, the coagulation of milk seems to be owing to a weak acid in the stomach, the relics of our vegetable food, inducing in healthy persons, a weak and soluble coagulum: but in different stomachs, this may be very different, in these becoming heavy and less soluble food, and sometimes even evacuated in a coagulated undissolved state, both by stomach and stool.

"As milk is acescent, it may be rendered sometimes purgative by mixing with the bile; and some examples of this have been remarked.' More commonly, however, it is reckoned among those foods which occasion costiveness.

"However, we may allow, that milk is always somehow insoluble in the intestines, as it is of a drying nature, and as cheese, &c. is very costive. And this effect shows, that milk is always coagulated in the stomach; for, if it remained fluid, no fæces would be produced, whereas, sometimes, very hard ones are observed. In the blood vessels, from its animal nature, it may be considered as nutritious; but, when we consider its vegetable contents, and acescency in the primæ viæ, we find that, like animal food, it does not excite that degree of fever in the time of digestion, and that, from its acescency, it will resist putrefaction. Hence, its use in hectic fevers, which, whatever be their cause, appears only to be exacerbations of

natural feverish paroxysms, which occur twice every day, commonly after meals, and at night. To obviate these, therefore, we give such an aliment as produces the least exacerbation of those fevers: and of this nature is milk, on account of its acescent vegetable nature.

"There appears, also, somewhat peculiar to milk, which requires only a small exertion of the animal powers in order to its assimilation; and, besides, in hectic complaints, there is wanted an oily, bland food, approaching to the animal nature; so that, on all these accounts, milk is a diet peculiarly adapted to them; and, in general, to most convalescents, and to those of inflammatory temperaments." *Encyclop. Britann.*

"Another difference in the use of milk exposed for some time to the air, is taking it boiled or unboiled. Physicians have generally recommended the former; but the reason is not easily assigned. Perhaps it is this: milk kept for some time exposed to the air, has gone so far to a spontaneous separation; whereas the heat thoroughly blends the whole, and hence its resolution is not so easy in the stomach: and thus, boiled milk is more costive than raw, and gives more fæces. Again, when milk is boiled, a considerable quantity of air is detached, as appears from the froth on the surface; and air is the chief instrument of fermentation in bodies; so that, after this process, it is not liable to acescency; for these reasons, it is proper for the robust and vigorous." *Hall's Encyclop.*

"While milk is judged to be the proper nourishment of new-born animals, there can hardly be a doubt that, to every new-born animal, the milk best adapted to it must be that of the species

it belongs to, and consequently, that of the mother who had immediately produced it.

"How long this nourishment is the best adapted to infants, it is difficult to determine; but the very purpose of multiplying the species shows, that nature has set some limits to it. So far as we can trust our observations on the human species, we find inconveniences from either too short or too long nursing. And it appears to me, that either less than seven, or more than eleven months, is generally hurtful; so that the ordinary practice of nine months seems to be well founded. From some accidental circumstances, this measure may be safely varied; but what are the circumstances of the infant's constitution that require it to be varied, more or less, has not, that I know of, been properly ascertained. The making it somewhat longer than the usual term is the safest; but I am persuaded, that long-nursing contributes to increase the disposition to rickets; and wherever children are slow in their teething, it seems improper to protract their nursing.

"Upon the subject of the chief use of human milk, it remains only to say, what may be the most proper to put nurses in the best condition to afford milk in the greatest plenty, and of the most proper quality. To this purpose I need not say, that if a nurse is chosen of a sound constitution, whatever, in general, is proper to preserve health, is the chief, perhaps all, that is necessary to make her a good nurse. What are the measures, in general, proper for this purpose, it is not requisite to say; and the only particular that we are engaged to consider here, is, that after having said so much of the connexion between the diet employed, and the milk produced, that we should determine, as

well as we can, what is the most proper diet for nurses.

"To ascertain this, we may observe, that the milks employed by the human species are all taken from animals living very entirely upon vegetable aliment; and, therefore, that a milk produced from that, is sufficiently well suited to the human economy: but, that it is the best suited to it, may be doubted from hence, that the milk destined to new-born children is the milk of women, who are capable of employing, and do commonly employ, a mixed diet of animal and vegetable matter: from which it might be inferred, that a milk afforded by such a diet, was the best suited to the human economy, even in the infant state.

"If, however, it be considered, that women's milk contains as much vegetable matter as any other; and, that nature has appointed it to be employed at a time when the chief purpose seems to be the introducing a vegetable matter, the use of a diet allowable, and, perhaps, necessary, at other times, does not afford an argument for its being proper upon this occasion.

"I might say a great deal to show, that the human economy, except in few instances, does not absolutely demand the use of animal food; that, in fewer instances still, does it demand it in large proportion: and that, for the most part, the health of the human body is best preserved by a large proportion of vegetable food. So, from all this, I think it will readily follow, that the health of women, during the time of their nursing, may be safely sustained by the use of vegetable aliments alone.

"From the employment, therefore, of animal food by the human species, there arises no argument

for the necessity or propriety of a woman's taking animal food during the time of her nursing. I allege it to be a matter of experience, that supposing the quantity of liquid to be the same, nurses living entirely, or for the greater part, upon vegetable aliment, afford a greater quantity of milk, and of more proper quality, than nurses living upon much animal food. This, I venture to assert, from the observation of fifty years; during which time, I have known innumerable instances of the healthiest children reared upon the milk of nurses living entirely upon vegetable aliments; and I have known many instances of children becoming diseased, by their being fed by the milk of nurses who had changed their diet from entirely vegetable, to the taking in a quantity of animal food. Nay, I have known instances of children's becoming disordered from a nurse's making a single meal of an unusually large proportion of animal food.

"It now remains to consider the use of milk as an aliment for adults. It is seldom that the milk of women, or of asses and mares, is employed for the whole, or even for a great part of diet; but, when they can be employed in sufficient quantity, there is no doubt of their being sufficiently fit for the purpose, though certainly affording a weaker nourishment than an equal quantity of the milk of ruminant animals. It is the milk of the latter, and especially that of cows, that is employed in this country; and it is almost only with respect to this, that I have had sufficient opportunities of making observation, so as to treat of it properly here.

"As the different parts of which milk, in general, consists, are all of a nutritious quality, and probably better suited to the purpose by their be-

ing introduced in a very liquid form; so, cows' milk commonly contains so much nutritious matter as to render it a very proper aliment: and we know that it is often sufficient for the whole of the nourishment of a man; and at least, in many instances, that it can serve for a very considerable part of it.

"While it is thus, in general, suited to the nourishment of men, it seems to be equally fit for them at every period of life, except for a few months of infancy; when, though cows' milk has, on certain occasions, answered the purpose, yet, from what has been said above, it does not seem, in any case, quite so fit as the milk of women: at every other period of life, except that mentioned, there can be little doubt of cows' milk being a sufficiently fit nourishment; but it may be more or less so at different periods. The younger children are, within the bounds mentioned, it seems to be more fit; as, at the same period, for the reasons given above, that vegetable aliment is necessary: but, as it is doubtful, if the economy can be properly supported by vegetable aliment alone; so, milk, as affording a portion of alkalescent matter, will be properly joined with it: and we know instances of a numerous people, who are sustained in a condition fit for all the functions of life, by milk and vegetable aliment alone. There can be no doubt, therefore, of the propriety of rearing children in the same manner. I believe it is hardly ever necessary to give children, under the age of puberty, any quantity of animal food; and we have innumerable instances in this country of children reared to the most perfect health and strength without the use of it, except the small quantity of it that is given by an egg, and this very sparingly and seldom bestowed. On the other

hand, I have often observed, that animal food much employed under the age of puberty, has very hurtful effects, particularly in giving irritability and an inflammatory disposition to the system. We are, indeed, of opinion, that a certain portion of animal food is intended by nature, and is very well suited to the human constitution; and, in cold climates, at the period of life when men are engaged in the laborious business of life, that animal food is then especially proper; and, perhaps, necessary; while, at the same time, milk may be less sufficient for the purpose.

"It appears, indeed, clearly enough, that milk, in a certain proportion, is an aliment very well suited to every period of life; and might be constantly employed, except in certain persons whose stomachs do not seem to digest it properly. From what cause this happens is difficult to determine. In every stomach milk is coagulated; but, in certain stomachs, it seems to be coagulated more firmly than in others, and, in that state, to resist the solvent powers of the gastric fluid: and we have had instances of this in which milk taken into the stomach was, after many hours, rejected by vomiting in large curdled masses. What this depends upon, I do not know, nor have, indeed, learned how it is to be remedied. In other cases, we have found, that milk was more ready to become acid in certain stomachs than in others; and there is little doubt, that in these, also, a coagulation takes place; but as we know, that milk spontaneously coagulated, or coagulated by acids, is often taken down with perfect impunity; so, it appears to me, that the coagulation which is here joined with acidity, has little or no share in the disorders that follow.

"Milk is certainly hurtful by its acescency in no other case, but where the stomach is preternaturally disposed to an acescent fermentation; when, indeed, it may be hurtful, and, like other acescents, aggravate the disease. It is, however, to be observed, in favour of milk, that when the serous part of it becomes acid in the stomach, the oily and caseous parts are particularly fit for re-absorbing and uniting with the acid towards forming an animal fluid: and it is upon this account, if I mistake not, that, for the most part, milk is of easy digestion, and soon fills the lacteals with chyle. Of its fitness to unite with acids, we have this proof, that milk, when coagulated by acids, has the acid always joined to the coagulated part; and, in the first appearances of spontaneous coagulation, the acid which is formed nearly at the same time, is always intimately united with the coagulated part. It is in proof of this, that I have known many instances of heart-burn, from acidity prevailing in the stomach, immediately cured by a draught of fresh milk.

"Another disease, to which it is alleged that milk is the proper remedy, is the gout. It seems to me, that the gout always begins in a plethoric habit, and that is supported and made ready to recur by the same; and, consequently, that, if a man never used animal food, he would never have the gout: and, that this is commonly the case, is strongly confirmed by this, that there is hardly an instance of men who have been reared, and who have lived very entirely upon a milk and vegetable diet, ever having the disease. To this consideration may be joined that of the many instances of men, who, by accident, have been reduced to low living, being cured of the gout, with which, be-

fore, they had been long afflicted. To apply this to our present subject, we shall observe, that as milk can never give a plethoric habit, so, we believe, that a diet consisting chiefly of milk, will save a person from ever being attacked with the gout. As we know, however, that, in the plethoric habits liable to this disease, a certain degree of vigour, and a certain firmness of tone in the whole system, particularly discovered by the state of that in the stomach, are necessary to produce the inflammation of the extremities, the necessary crisis in such habits; so, various disorders may be occasioned in such persons by diminishing the vigour and tone of the system. Accordingly, it is possible, that a milk diet more especially as a change from one more nourishing, may have that effect; and, I am therefore of opinion, that for entirely preventing the gout, it is necessary that a milk diet be entered upon early in life, before the gouty diathesis be formed. But if, after the gout has come on, a milk diet is to be employed for a cure, it must be in persons of entire vigour only; and there are instances of its being employed in such with advantage and safety. In gouty persons, however, advanced in life, and who are liable to a loss of tone, there may be much danger in attempting a milk diet; but, at the same time, I must say, that as milk is not so weak a diet as one entirely of vegetables, so the former will always be more safe than the latter." *Cullen.*

Much has been said and written on the use of tea, as a part of diet; and, considering its long established and almost universal use among all ranks of people, perhaps my opinion will be little regarded; for custom is no less powerful in drink and food, than in many other things: however

that may be, after delivering my sentiment, I shall leave others to judge for themselves. Tea being prepared and used in a liquid form, becomes a species of drink; and, therefore, it might not improperly have been considered as such; but it being generally drunk at table, and with food, has induced me to treat of it in the present chapter.

It is difficult to account for so general use of an article brought so far, unless it be imputed to a predilection for foreign things, and to mere custom or fashion; for it will be admitted, that tea possesses no very nutritious qualities, nor any very agreeable taste, more than may be ascribed to its constant and habitual use; it being now established, upon undoubted authority, that all the different kinds are the produce of one and the same plant; and that the difference depends only on the soil, time of gathering, and method of preparing it.

The use of tea has become so general, that there is scarcely a family that passes a day without it, either in the morning, or afternoon, and perhaps, at both times; but this does not prove its great utility, or salubrity; for people formerly lived without it, and were healthy; and it is thought more so than they are with it; though it is not denied, that common bohea tea, made weak, and drunk cool, with a large portion of milk, and little sugar, may be pretty innocent; but it is judged, that a constant and liberal use of the highly flavoured kinds, drunk strong and hot, with little or no addition, relaxes and weakens the stomach, and impairs digestion; and is, therefore, injurious to health.

It is supposed, that tea contains a volatile, cordial, or reviving principle; which, if admitted, is nothing in favour of its wholesomeness for con-

stant use; for powers of a stimulant nature, when long continued, are sure to be followed by an atonic or debilitated state of the stomach; and, finally, of the whole constitution.

Many cheaper and more innocent substitutes may be found in our own country; which, if prepared in a similar manner, should be used rather cool than hot.

Both tea and coffee are a far less salutary part of diet, particularly for children, than milk and its different preparations, with those of arrow-root, sago, tapioca, and salep.

"Tea, when received into the stomach, is highly debilitating and relaxing, and the immoderate use of it is attended with the most pernicious effects. It is curious to observe the revolution which hath taken place, within this century, in the constitutions of the people of Europe. Inflammatory diseases more rarely occur; and, in general, are much less rapid and violent in their progress, than formerly.

"This advantageous change, however, is more than counterbalanced by the introduction of a numerous class of nervous ailments, in a great measure, unknown to our ancestors; but, which now prevail universally, and are complicated with almost every other distemper. The bodies of men are enfeebled and enervated; and it is not uncommon to observe very high degrees of irritability, under the external appearance of great strength and robustness. The hypochondria, palsies, cachexies, dropsies, and all those diseases which arise from laxity and debility, are in our days endemic every where; and the hysterics, which used to be peculiar to the women, as the name itself indicates, now attacks both sexes indiscriminately.

It is evident, that so great a revolution could not be effected without the concurrence of many causes; but, amongst these, I apprehend, the present general use of tea, holds the first and principal rank. The second place may, perhaps, be allotted to excess in spirituous liquors. This pernicious custom, in many instances at least, owes its rise to the former; which, by the lowness and depression of spirits it occasions, renders it almost necessary to have recourse to what is cordial and exhilarating. And, hence, proceed those odious and disgraceful habits of intemperance, with which too many of the softer sex, of every degree, are now, alas! chargeable.

"Green tea is much more sedative and relaxing than bohea; and the finer the species of tea, the more debilitating and pernicious are its effects, as I have frequently observed in others, and experienced in myself.

"This seems to be a proof, that the mischiefs ascribed to this oriental vegetable, do not arise from the warm vehicle by which it is conveyed into the stomach, but chiefly from its own peculiar qualities." *Percival.*

"A moderate use of fermented or distilled spirituous liquors, is far less prejudicial to the constitution, than the habitual and excessive drinking of warm liquors. Tea, the common favourite among all ranks, if taken regularly twice a-day, and in large quantities, is attended with bad consequences. It thoroughly relaxes the coats of the stomach, weakens the bowels, predisposes them to flatulency upon the least occasion, and destroys all the energy of the digestive organ. These effects, however, are not so frequent, nor, indeed, to that extent, if the tea be drunk strong, sufficiently dilut-

ed with milk, and sweetened with sugar. It is chiefly the warm water which renders the tea of the common people so destructive to the constitution, as they generally make up for the indifferent quality of the tea by the quantity of water.

"The relaxation which tea occasions in the first passages, renders it peculiarly hurtful to females of lax fibres, a thin blood, and irritable habits. To enumerate the great diversity of nervous symptoms, attending its abuse, in such constitutions, would lead me too far from the prescribed limits; but so much is certain, that the vapours arising from liquors, drunk very hot, like tea, weaken the lungs, and dispose their votaries to frequent colds and catarrhs, which readily make a transition into consumptions.

"A moderate use of tea may, sometimes, be of service to persons in a perfect state of health: yet, for daily use, it cannot be recommended.

"Hypochondriac and hysteric people, however, are much deceived in the efficacy of tea, as a diluent drink; for all the evils arising from relaxation, a weak stomach, and flatulency, under which such persons usually labour, are, by the habit of drinking tea, increased to the most alarming degree. The cold stomach which they propose to warm by it, is a mere phantom of the brain: for this sensation of cold is nothing but relaxation, which, instead of being removed by hot liquors, is increased by every repetition of them.

"It would be a great proof of patriotic spirit in this country, if the use of this exotic drug were either altogether abandoned, or, at least, supplied by some indigenous plants of equal flavour, and superior salubrity. The Chinese have good reason to smile at our degenerate taste, when they are in-

formed, that we actually possess an immense variety of the most valuable aromatic plants, much better calculated by nature to invigorate our stomachs, and to revive our spirits, than tea, which we purchase from them at a great expense. These sentiments may be ungrateful to tea-dealers, or East India merchants, but every honest truth should be candidly told to an unbiassed public.

"It would, undoubtedly, be more conducive to our health, if we would altogether dispense with the use of warm liquors, at least, when in an healthy state. But, if this practice must be indulged in, we ought to choose the herbs growing in our own meadows and gardens, instead of making ourselves tributary to distant nations. With this intention, the late Dr. Solander introduced his sanative tea; not with a view of making it a secret or quack medicine, under which character it is now sold in this country, but of recommending the use of it to those individuals who require diluent liquors, and to the heavy, sluggish, and phlegmatic. Dr. Tissot had previously recommended the stalks of cherries, and the leaves of peach and almond trees, to the poor people of Switzerland, as substitutes for tea; but we possess a variety of plants infinitely superior to these, of which I have myself occasionally made trial.

"I shall divide them into three classes; namely, 1st, The strong, spicy, and balsamic plants, such as balm, peppermint, sage, and the like. 2d, The strongly aromatic flowers, among which, those of the rosa pimpinelli folia, (or the rose whose leaves resemble the burnet saxifrage), and the woodroof, or the asperula odorata, Linn. deserve the first place, and far excel in flavour all the teas imported from China; and, lastly, 3d, The mild aromatic

leaves and blossoms of trees and shrubs; for instance, the blossoms of the lime tree and the black thorn; the leaves of the peach and almond trees, and, particularly, the first tender leaves of the whortle-berries, or the vaccinium myrtillus, Linn. which cannot be distinguished from real tea, when properly gathered, and dried in the shade.

"After having pointed out the best substitutes for Indian tea, I cannot suppress my earnest wish, that even these indigenous vegetables may not be abused by decocting them in too much water, which, when swallowed hot, must be detrimental to the stomach and lungs, the nerves, and the whole human frame." *Willich.*

"All nervous disorders are certainly aggravated by the use of tea: and it is equally unfit for children and those of lax fibres, especially the first, whose fluids bear a much larger proportion to the solids of the body than in adults, for whom it is more proper; especially those of a warm sanguineous temperament. Green tea is mildly astringent, by which the relaxing power of warm water is corrected, consequently, weak tea, drunk too hot, will enervate; and, if very strong, it may prove equally pernicious by affecting the head or stomach.

"When it is drunk in moderation, and not too warm, with a large addition of milk, and little sugar, I believe it will seldom prove hurtful, but, on the contrary, salutary." *Leake.*

I shall have occasion to resume the subject of tea hereafter; and shall then make some farther observations, and adduce some additional authorities, on the nature and effects of tea-drinking in the afternoon.

Coffee is very generally used for breakfast, to

which meal, it is mostly confined in this country, though, in some others, it is frequently drunk at dinner, immediately after meat: and some think this is the most proper time to drink both tea and coffee, in order to assist digestion.

Coffee contains a large quantity of oil, which renders it more nutritious than tea; but, whether more innocent and wholesome, is doubted by some, especially if drunk hot, and without a large proportion of milk; for it is thought, that the hot state in which both are used, contributes greatly to increase their unhealthiness.

The goodness and wholesomeness of coffee depend much on the torrefaction of the seeds, which should be only browned or roasted, not parched or burnt, before they are used; as, by the latter, the oil in them is rendered empyreumatic, and particularly offensive to certain stomachs.

It is supposed that an infusion, or a simple decoction of the berries, is more innocent and healthful than one made by long boiling, in which last way, it is generally prepared in cities and towns, where it is much more used than in country places.

Sugar, in a small proportion, is a wholesome addition to both tea and coffee: and milk, or cream is, undoubtedly so, in large quantity.

Coffee is not only an article of diet, but when prepared strong, is an useful preventive and remedy in asthmatic disorders of the spasmodic kind; and in nervous, periodical headachs, depending on debility of the stomach.

Various substitutes have been proposed and used for coffee, such as rye, barley, pease, almonds, lentils, acorns, and of late, the root of the beta cicla, or scarcity-root, and even potatoes; but none have been found equal to the Indian coffee. A portion

of some of these may, however, be usefully added to it, for those who have been accustomed to drink it very strong, and with whom it disagrees.

It is rare to see great and constant drinkers of strong tea and coffee, somewhat advanced in life, who have not some symptoms of weakness, tremors, or indigestion: wherefore, it is judged, that the great number and increase of paralytic, nervous, and hypochondriac diseases are, in part, to be attributed to the frequent and excessive use of those articles, drunk in a hot and strong state.

"From these observations we may infer, that coffee is slightly astringent and antiseptic; that it moderates alimentary fermentation, and is powerfully sedative. Its action on the nervous system probably depends on the oil it contains; which receives its flavour, and is rendered mildly empyreumatic by the process of roasting: and it is well known, that rye, torrefied with a few almonds, which furnish the necessary proportion of oil, is now frequently employed as a substitute for these berries.

"In delicate habits, it often occasions watchfulness, tremors, and many of those complaints which are denominated nervous. It has even been suspected of producing palsies; and from my own observation, I should apprehend, not entirely without foundation.

"Slare affirms, that he became paralytic by the too liberal use of coffee, and that his disorder was removed by abstinence from that liquor."

Percival.

"Coffee is a decoction of the well-known bean or berry of that name, roasted and ground into powder. The bitter and astringent powers of the beans, in some measure, correct the bad properties of warm water; but if they be too much roasted,

their empyreumatic oil is expelled, and they acquire an insipid taste. If, on the other hand, they be not sufficiently toasted, this burnt oil is not evolved to the surface of the bean, and the coffee acquires a bitter and unpleasant flavour.

"If drunk too strong, it affects the nerves; and, by its penetrating property, often occasions tremors of the hands and sleeplessness; but, in some phlegmatic and indolent individuals, it is apt to excite sleep.

"If coffee be not used merely as a diluent for relaxing the fibres, it ought to be made strong. The best proportion is one ounce of well-roasted and ground coffee to one pound, or one pint of water, which should be just allowed to boil up; for, the longer it is boiled, it loses the more of its volatile and aromatic particles; and, consequently, becomes weak and insipid. As coffee is possessed of excellent antispasmodic virtues, it is a favourite beverage with the hypochondriac and hysteric; and, according to early observation, it is also the best and most effectual remedy in spasmodic asthma.

"An immoderate use, however, of this decoction, is prejudicial to the healthy, and destructive to the diseased. It debilitates the latter still more, by causing great undulations in the blood, tremor of the limbs, giddiness, and a certain insupportable timidity. It leads people of a sanguine temperament, and particularly females, to the long train of all the fashionable nervous diseases."

Willich.

Chocolate is used for breakfast by some, but not so generally as tea and coffee. It is well known to be an artificial compound substance, containing a large proportion of unctuous or oily matter; and, therefore, requiring strong powers of diges-

tion: for which reason, it should be made weak, mixed with a large proportion of milk, and used sparingly, without much butter or oil. Under which circumstances, it is a healthy part of diet.

It is of so nutritious and satiating a nature, that it is not improperly, nor unfrequently used at dinner by those who, through inclination or necessity, partake of little or no animal food.

Some use the shells or husks of the kernels of the cocoa-nut, or chocolate-nut tree, prepared like coffee, as a substitute for this article: they make a light and wholesome beverage for those who like it, and with whom coffee, and the common compound preparation of chocolate, disagree.

"It has not been observed, I believe, that those who, in this manner, make chocolate a part of their food, are subject to any particular distempers. It may be considered, therefore, as a wholesome kind of breakfast to those who like it, and with whom it agrees. It is of an unctuous nature: therefore, little or no butter should be used with it. Were it commonly made thinner than is the general practice, and a large proportion of milk added, it would seem to be much more proper for common use, than as it is generally served up at present."

Fothergill.

"Chocolate, especially when boiled with milk and eggs, is exceedingly nourishing: but the spices with which it is mixed, such as cinnamon, cloves, musk, vanilla, and the like, make it the more heating, and less wholesome. The common chocolate prepared with sugar, eggs, milk, and water, is the most nutritive and wholesome; but a too frequent and immoderate use of it is always hurtful, particularly to hysteric and hypochondriac persons, as the cacao is too fat and indigestible to them, and

creates a false or forced appetite. Cacao, of itself, is less heating and lighter, than if made into chocolate; but it is not so nourishing. The immoderate use of this oily beverage is apt to induce a febrile state in young people, and to supply the sedentary with superfluous nourishment; while it frequently brings on, like coffee, a state of irritability and uneasiness. To the corpulent and weak, it is improper, and, if they be immoderate eaters, it induces inflammatory diseases and apoplexies."

Willich.

Animal food is eaten by some for breakfast; but much of it is not very commonly used at this meal, except by farmers and other hard labourers, for whom it may be more admissible and innoxious; but, from what I shall say hereafter, it will appear, that much flesh is not so essentially necessary, at any meal, even for that class of people, as some have supposed.

Section 2. *Dinner.*

Dinner is the meal, in which the greatest excess of diet is generally committed: indeed, some persons eat very little breakfast, and seem to save and whet their appetites for dinner; but it would be better if great or luxurious eaters were to divide their meals more equally; that, is, to eat more in the morning, and, by that means, to lessen the appetite at noon.

Some have not much appetite for breakfast early in the morning; but it is frequently owing to eating late heavy suppers, and to lying a-bed late: both of which are not according to the rules of health.

It may, perhaps, be understood, from what I

have already said, that, if people were careful not to exceed in the quantity of food, the quality was to be little regarded; but this is not my meaning; neither is it of the experienced Dr. Fothergill, whom I have several times quoted, and once in these words: "Though I think the quantity of food is a matter principally to be regarded, yet the quality is not a matter of indifference."

It is at this meal, also, when the greatest variety is generally prepared and partaken of; and such as is of the most hurtful tendency or consequence; but, to mention every article, would require a volume, and not be within my prescribed plan. I shall, therefore, first, give my opinion on the nature and difference between animal and vegetable food; and then enumerate some of the articles most commonly used at this meal.

From observing that some nations or individuals live almost entirely on animal, and others on vegetable food; and that all, perhaps, enjoy a pretty good state of health; it might, from hence, be inferred, that both are equally healthful; but the result of my observation and experience, both on my own constitution, and on those of others, has led me to believe, that a vegetable diet, or one in great part so, is most consistent with, and conducive to ease, health, and longevity; for I have generally observed such to enjoy the most uninterrupted health; to be subject to the fewest diseases, the mildest symptoms, and the least mortality: while, on the contrary, I have frequently remarked, that those who live much on animal and highly seasoned food, are oftener indisposed, and peculiarly liable to both inflammatory and putrid disorders, attended with violent symptoms, and great mortality. And I have heretofore said, that im-

moderate eaters are prone to much the same diseases, as excessive drinkers: in short, they are frequently concomitants in the same subject, until drink destroys the appetite for food; which is, and ought to have been mentioned as one of the pernicious effects of strong drink on the constitution; and which is more often the consequence of distilled, than fermented liquors.

It may be thought more particularly necessary for persons employed in laborious occupations, to eat much animal food: this may appear so; at least I think, that their exercise prevents, in great part, the injurious effects that would otherwise probably result from such a diet; but we well know, that that class of people are, generally, not in circumstances likely to be supplied with it so plentifully, as many in more easy situations and employments; and yet, perhaps, subject to fewer diseases, except such as may be imputed to their exposed situations. And I have known many farmers in the summer, during their most laborious business, to refuse animal food, and prefer milk, and a vegetable diet, saying, that they could better endure the heat, thirst, and labour of the hot season, with the latter, than the former. Such food may, indeed, be needed oftener, but I pronounce it more innocent and wholesome, and sufficient for most or all the purposes of life. And I have frequently observed, that I could bear exercise, particularly riding on horseback, better on a milk and vegetable diet, than on much solid animal food. And I have somewhere seen a similar remark.

Indeed, I think I foresee the time, and that, perhaps, ere long, when men will endure the heat and fatigues of labour, without much animal food, with nearly as great certainty, success, and im-

provement of their health, as, within a few years, they have found they can do, without spirituous liquors.

A change from much animal to vegetable food, is particularly useful and necessary, both for persons who migrate from a northern to a southern climate, and for such as change their situation from a country to a city life; which last is generally accompanied with an impure air, and a want of exercise: both of which render an attention to diet, and to the state of the excretions, more essential and important. And a substitution of vegetable, for much animal food, is, also, more particularly necessary in all hot climates, seasons, and places, where putrid disorders prevail.

A large proportion of vegetables, from being liable to run into an acescent fermentation in the stomach, may not, however, be altogether so proper for persons troubled with acidities in the primæ viæ or first passages, as a greater share of animal food. But, for the same reason, vegetables are better adapted for obviating and reducing scorbutic and corpulent habits, which generally require diet and medicines of a vegetable and acid nature.

Dinner is, generally, in this country, made up of bread, some species of animal food or fish, and of various kinds of vegetables or sauces; of each of which there are many different kinds.

Of bread I have already spoken; and I think, that a large proportion of it, with flesh, if properly prepared, contributes to a healthy diet.

Animal food is of so many different kinds, that it will not be expected, that I shall mention them all separately; but shall only observe here, that the kind, as I have above remarked of quantity, must be left, in great measure, to every person's

own choice and experience; for observation and experience have long evinced, that our idiosyncrasies, or particular constitutions, are no less diversified than our external visages: so that, what is agreeable to one, may be very prejudicial to another: and, that this is no less true in diet, than in medicine: for instance, pork may agree well with one; beef with another; veal or mutton with a third; and, perhaps, fish or fowl with a fourth: and yet all these may, perhaps, disagree with as many different persons: wherefore, the kind must be left to every one's choice and experience, with the caution I have already expressed relative to quantity.

Little animal food is particularly necessary for persons of irascible, or passionate dispositions.

Most kinds of flesh are more soluble and wholesome, when boiled, than roasted, baked, or fried; for, by the last processes, the fat or oily parts are frequently rendered empyreumatic or burnt; which are very indigestible, and peculiarly offensive to weak, delicate stomachs: indeed, the most robust rarely escape their effects; and yet most of the flesh in cities is cooked in this way, which is more suitable for the vigorous stomachs of country people, or, more properly, is fit for none.

It is a contested point, whether flesh is easiest digested, and most healthy, in a rare state, or thoroughly cooked? There is reason to believe, if the former is not generally admitted in every way of preparing it, that its indigestibility is increased by long baking, roasting, and frying.

Butter is often added in this way, or gravy is made of it, which undergoes the same change, and is, therefore, equally, or, perhaps, more unfriendly to the stomach and digestive organs,

Boiled flesh generally sits lightest on the stomach, and is easiest digested; and broth is very suitable for students and sedentary people: and all fat soups, with marrow, are peculiarly adapted for such as are subject to a dry bound state of their bowels.

Broths and soups are too little used in diet. In this respect, the French cookery is far preferable to the English, and more conducive to health.

It has been found, and ascertained by experiments, that the lean parts of animals are more disposed to putrefaction, than the fat; and, therefore, are less proper in hot seasons, and putrid diseases.

Most kinds of food, as well as drink, are best eaten rather cool than hot; for, in the former state, they are more easily digested, and we are less apt to commit excess. And it is observed, that cool food and drink enable the constitution to bear cold better, than those that are hot.

Fresh animal food is more generally used in cities and towns, than salted or pickled; but whether more healthy, is to be doubted, especially under the present mode of preparing and cooking it.

A reason for avoiding much animal food, especially in cities, and during the summer season, is, that a great part of the fresh meat brought to market, becomes overheated and feverish by long-keeping and driving the animals; and some, perhaps, has already undergone the incipient stage of putrefaction before it is cooked. This, I need hardly say, must be unwholesome and dangerous; and will be likely to produce putrid and malignant diseases.

Another is, that much salt meat creates a thirst;

and, consequently, a sense of suffering or uneasiness for want of drink.

It is, therefore, recommended to all in hot seasons and climates, to abstain from much animal food; and to those who use it, to eat, instead of much fresh meat, that which is smoked or pickled; which, if very salt, may be freshened when it is cooked: whereby the uneasy sensation of thirst, and necessity for much drink, will be prevented.

The necessity for much animal food will appear less, and the use can better be dispensed with, when we recollect, that the appetite for it is, in part, habitual, or at least, is increased by habit, somewhat like that for tobacco and spirituous liquors; which is clearly proved by persons who have been in the daily practice of eating flesh, ceasing to crave, after they have sometime refrained from it.

Flesh that has become putrescent or tainted, should always be avoided. When, however, that change takes place, and necessity leads to eat it, it may be arrested, and, in degree, corrected and improved, by burying it in powdered charcoal, or by adding some of that substance to it whilst boiling. Or it may be immersed for some time, either in a weak alkaline ley, in fresh yeast, or in the lees of wine or beer in a fermenting state.

One meal of animal food is as much flesh as I judge conducive to health, for most people, in twenty-four hours: and this should be eaten at dinner, rather than at any other time; though some, owing, however, I believe, in great measure, to habit, prefer it at supper, or make an additional meal of the same at that time; but this is contrary to the rules of health.

Were I to proportion a dietetic dinner, I would

make only one third part of flesh, fish, or fowl; and the two others equally of bread and vegetables.

Vegetables and condiments, or sauces, are no less various in kind than animal food; and, indeed, rather more so: therefore, I shall not mention them separately; but, as some are found most agreeable and easiest of digestion, the choice must be left to every person's own experience; with this liberty, that as most kinds of vegetables are of a lighter and more soluble nature, for many people, than much animal food, they may more innocently and safely be indulged in: and I think, that a large quantity of those, in proportion to this, contributes to a wholesome diet.

Some think, that animal food is more quickly and easily digested, than vegetables and milk; which may, perhaps, be the case in certain constitutions long accustomed to the former; but the digestibility of the different kinds of aliment can be best ascertained by the length of time before they leave the stomach; which has, on experiment, been found as follows: milk generally passes in a short space of time; fresh vegetables next; bread in about four hours; fish in five; and flesh meat not till six or seven.

Different kinds of pies and puddings are often added to this meal. Fruit-pies, and rare boiled puddings are pretty easy of digestion; and, therefore, may well supply the place of some animal food; but meat-pies, and baked puddings, to which butter or fat has been added, and exposed to considerable heat, are hardly admissible, or to be freely indulged in, immediately after a full meal of flesh, or other solid food, especially by valetudinarians or weakly people; as they are very

oppressive and clogging to feeble stomachs, and not unfrequently occasion the sick head-ach; which, as well as some other complaints of the head, is undoubtedly owing to the state of the stomach, or to its contents.

Eggs may constitute a part of dinner; but at whatever meal they are eaten, they should always be rare boiled or fried; or, which is better, gradually coagulated in hot water from five to ten minutes; for, if they are cooked hard, they become indigestible on many people's stomachs. A portion of salt is thought to promote their solution in the stomach.

There is, perhaps, no more healthy way to take eggs, than to swallow them alone in a crude state, or beaten up with a little wine, metheglin, or cider, in the morning fasting, or a little before dinner. Fresh eggs are more nourishing and digestible than stale, and ought always to be preferred.

Confections or sweetmeats make, sometimes, a concluding part of dinner; but very improperly; for, by their sweet cloying nature, they pall the appetite, and impair the digestive faculty.

It is, moreover, both proper and necessary for persons, who purpose to make an addition of any of the last-mentioned articles to a full dinner of animal food, to remember, that they ought to stop with the latter long before the first sensation of satiety, in order to leave room for the former; so that, after all, they may rise from the table before their appetites are fully satisfied.

I have not yet added milk as a part of diet at dinner; but, I think, it is very suitable, both for people of feeble constitutions, and sedentary lives, such as the inhabitants of cities and manufactur-

ing towns, and for the more laborious in the heat of summer; when it has the effect of preventing and allaying thirst, and enables them to go through the greatest fatigue, equal or superior to animal food.

Chocolate being of a nutritious and unctuous nature, makes a suitable substitute for much flesh at dinner.

Tea and coffee, particularly the latter, are drunk, by some, immediately after dinner; though not commonly in this country. Either tea or coffee is, however, more innocent, and far preferable to the practice of drinking copiously of wine or spirits after dinner; which, if long continued, generally proves, sooner or later, injurious.

Although I recommend simplicity in kind, and moderation in quantity, I am not wholly against a variety or change at different meals; but judge it favourable to health and longevity, not to live wholly, or longer than a few days at a time, on the same kind of food. However, it is not to be doubted, that more injure their constitutions, and suffer in their health, by a variety of high-seasoned meats and poignant sauces, than do by a simple, spare diet: indeed, so evidently so, that the new diseases, which may not improperly be said to have increased, within a century past, in a two-fold proportion to one dish, are, perhaps, in great measure, owing to the complicated cookery and luxurious living of the present day.

The numerous instances of declining health, consumptions, and mortality, in some families, which have changed their circumstances and livelihood, from a simple and industrious, to a more indolent and luxurious way of living, are sufficient and corroborating proofs, that an effeminate or

overdelicate education and refined mode of life, are inimical to health and longevity.

"In this country, animal food, of one kind or another, constitutes the chief part of our nourishment. That there are some kinds of more easy, some of harder digestion than others, is well known to every body. Yet, I am inclined to think, there is scarcely any part of animal diet in use, that would not occasionally be made to agree, that is, to be digested without much difficulty, if we were full as anxious in respect to excess of quantity, as to the unsuitableness of the kind; at least, this opinion corresponds with my own observation and experience. If a person eats as much of ham, salted beef, or bacon, as he ought to do of fish, or of chicken, he may suffer by it.

"The article of puddings on an English table, is an affair of consequence. After a plentiful dinner of animal food, rich sweet puddings, desserts, or even fruit, seem a very unnatural and improper addition; more especially, if the puddings are baked: for a little butter, long exposed to the heat of an oven, becomes, oftentimes, a cause of much suffering.

"Of vegetables it will be necessary to say something. The rule, in general, is, to appeal to what best agrees, in this respect, with each particular constitution. I have only one short caution to give on this head: Those who think it necessary to pay any attention to their health at table, should take care, that the quantity of bread, and of meat, and of puddings, and of greens, should not compose each of them a meal, as if some were only thrown in to make weight; but carefully to observe, that the sum of all together does not

exceed due bounds, or encroach upon the first feelings of satiety." *Fothergill.*

"It is an important rule of diet, to eat, if possible, of one kind of meat only; or, at all events, to eat of that dish first which is the most palatable. The stomach is enabled to prepare the best chyle from simple substances, and will thence produce the most healthy fluids. And, if we follow the second part of this rule, we are in no danger of overloading the stomach. At a table dietetically arranged, we ought to begin with those dishes which are most difficult to be digested, and finish our meal with the most easy; because the former requires stronger digestive powers, and more bile and saliva, all of which become defective towards the end of a meal.

"A too frequent and excessive use of animal food disposes the fluids to putrefaction, and, I believe, in some sanguine temperaments, communicates to the mind a degree of ferocity. Even a child will refuse the breast, when its nurse has eaten too much animal food. Those who eat great quantities of meat, and little bread or vegetables, must necessarily acquire an offensive breath. It appears, therefore, to be most suitable and conducive to health, to combine animal with vegetable food, in due proportion. This cannot be minutely ascertained, with respect to every individual; but, in general, two-thirds, or three-fourths of vegetables, to one third or fourth part of meat, appears to be the most proper. By this judicious mixture, we may avoid the diseases arising from a too copious use of either.

"When meat is fried, it is, in some degree, deprived of its substance; but, if the fire be strong enough, a solid crust will soon be formed on its

surface, by which the evaporation will be checked, and the flesh rendered mellow: the butter, or other fat, used to prevent its adhesion to the pan, gives it a burnt or empyreumatic taste, and renders its digestion on the stomach rather difficult. Melted fat, or the drippings of baked and roasted meat, are equally, if not more, pernicious to the stomach than even stale butter, and both ought to be used only for greasing cart-wheels, and not for injuring human organs.

"In summer, it is advisable to increase the proportion of vegetable food, and to make use of acids, such as vinegar, lemons, oranges, and the like; the blood being, in that season, much disposed to putrescency. He who continually takes nourishing food, is liable to become fat and plethoric; while, on the contrary, the parsimonious, or the religious fanatics, from their abstinence, become thin and enfeebled: hence the medium, or a proper mixture of both vegetable and animal nutriment, seems to be most conducive to health. I cannot sufficiently recommend the following caution to those who are frequently troubled with a craving appetite: the more food the stomach demands, the more sparingly it ought to be furnished with strongly nourishing substances, in order to avoid obesity or fatness; and much vegetable food is, in this case, required, to counteract that disposition to putrescency, which the frequent eating of animal substances necessarily occasions.

"Much animal food is improper for those of a full habit and abundance of blood; for febrile patients; and those who are disposed to hæmorrhages, or losses of blood. It ought to be sparingly used in summer, and in hot climates. Persons, whose fluids already evince a fetid tendency, and who

are reminded of it by frequent eruptions of the skin, or who have a disposition to corpulency, should abstain from a too copious use of animal food.

"The flesh of old animals that have less muscular parts than the young ones of the same species, is indigestible; and we may lay it down as a general rule, that the more the flesh of an animal is disposed to putrefaction, the more it is unwholesome.

"Baking, also, forms a crust over it like roasting; but the fat, incrassated by heat, may occasion inconvenience, as it possesses an oily acrimony, and is with difficulty digested. For the same reason, it is improper to eat the burnt crust of any meat, of which some persons are particularly fond; for it contains an empyreumatic oil, highly pernicious, and altogether indigestible." *Willich.*

"Animal food, although it gives strength, is yet of many hazards to the system, as it produces plethora and all its consequences. As a stimulus to the stomach, and to the whole system, it excites fever, urges the circulation, and promotes the perspiration. The system, however, by the repetition of these stimuli, is soon worn out; and a man who has early used the athletic diet, is either early carried off by inflammatory diseases, or, if he takes exercise sufficient to render that diet salutary, such an accumulation is made of putrescent fluids, as, in his after life, lays a foundation for the most inveterate chronic distempers.

"Those who are chiefly employed in mental researches, and not exposed to too much bodily labour, should always avoid an excess of animal food.

"With regard to solution, we take in the oils

of animal food; which, when tolerably pure, are the least putrescent part of it, and by diminishing the cohesion of the fibres, render them more soluble: on this last account, is the lean of fat meat more easily dissolved than the lean of other meat. But, when the meat is exposed to much heat, this oil is separated, leaving the solid parts less easily soluble, and becoming itself empyreumatic, rancescent, and of difficult mixture in the stomach. Fried meats, for the reasons now given, and baked meats, for the same, as well as for the tenacity of the paste, are preparations which diminish the solubility of the food." *Encyclop. Britann.*

"The facility with which animal food is to be procured in cities, in comparison with an uncivilized state of things, is another cause of the excess in which it is consumed. It is said excess, for there is but one voice on this subject. All know, that animal food is consumed by every Briton that can purchase it, in a degree at once, not only unnecessary to the sustenance, but actually destructive to the health of himself, and calamitous to the community.

"1. That it is unnecessary to his sustenance, is evident from the health and strength enjoyed by those, who, from habit or necessity, do not partake of it in any proportionate degree. Animal food is said to give strength; yet the most laborious class of the people eat of it the least. The fields are ploughed by men who have seldom more than one meal of flesh in seven; and, if it should be said, that these people and their families, are not those who undergo the hardest labour, it will, at least be allowed, that they have greater calls on their strength, than thousands of those, who, in cities, consume yet

more of this food than any description of labourers that can be instanced.

"2. With respect to the health of body and mind; to the first, animal food is liable to prove destructive by inducing, besides other evils, plethora and all its consequences, while vegetable, without the utmost indolence, and sharpest appetite, never does; and to the second, the favourableness of the vegetable is matter of general belief.

"It appears, says a writer on the present subject, 'that delicacy of feeling, liveliness of imagination, quickness of apprehension, and acuteness of judgment, more frequently accompany a weak state of the body. It is true, indeed, that the same state is liable to timidity, fluctuation, and doubt; while the strong have that steadiness of judgment, and firmness of purpose, which are proper for the more active scenes of life.' The most valuable state of the mind, however, appears to reside in somewhat less firmness and vigour of body. Vegetable aliment, as never over distending the vessels, or loading the system, never interrupts the stronger motions of the mind; while the heat, fulness, and weight of animal food, are an enemy to its vigorous efforts."

Kendal's Encyclop.

"To conclude the general consideration of aliments taken from quadrupeds, I must say a little of their effects, in general, on the human constitution.

"The first effect to be taken notice of, is their giving, in the same proportion taken in, more nourishment than any vegetable aliments do. The latter can afford, as we have said, the whole juices of an animal body, but certainly not in pro-

portion to the quantity of them taken in; whilst animal substances that can be entirely dissolved in the gastric juice, seem in proportion to that quantity to be entirely convertible, as the expression is, in succum et sanguinem. If, at the same time, they are in the smallest quantity less perspired, they must greatly increase the plethoric state of the blood-vessels. Animal food, therefore, is always ready to induce this state; and, in growing bodies, such food will always favour, and probably hasten, the growth: and although in adults, exercise and other means, by supporting the excretions, may prevent its having this effect, yet it will always have a tendency to produce a plethora ad volumen. Moreover, as animal aliments, for the most part, introduce a greater proportion of oily matter, they are ready to occasion a larger secretion of oil into the adipose membrane, and thereby produce obesity; which, when considerable, must straiten the sanguiferous vessels, and consequently produce a plethora ad spatium.

"Some of our readers may, perhaps, judge, that a great part of what I have now said might have been left to be understood from the general doctrine of plethora; but, both because I think that general doctrine has not been always well understood, and because when it was my business to explain the effects of animal food, I thought it necessary to show that its effects are especially to give a nicer balance in several respects to the system, and thereby give a disposition to many diseases which might be avoided by a more temperate use of such food. It deserves, also, to be remarked, that though a proper measure of such aliment, with an exercise suitable to it, may render it long consistent with health, yet, as the constant use of it

gives a nicer balance to the several parts of the system, so every unusually large indulgence in it must be extremely dangerous.

"From these considerations, the whole phenomena of digestion, with respect to the system, may be explained; and, upon the whole, that although animal food may be admissible by the human economy; and, in certain circumstances of that, it may be proper and even necessary; and, therefore, that in many cases, it may be consistent with health; yet, that for the most part, a small portion of it only is necessary; that the very temperate and sparing use of it is the surest means of preserving health, and obtaining long life; whilst the large use of it tends to the production of diseases, and to the aggravation of those that, from other causes, may incidentally come on.

"Before I leave the subject of animal food in general, I must touch a question that, I think, especially relates to it; and that is, whether sleeping after a full meal be suitable to the health of the human economy? If we are to trust to the institution of nature in the brute creation, and suppose that their instincts are generally suited to the health of their economy, it would appear, that sleep after eating, is suited to favour their digestion: but whether they may be suited to the human economy, may be doubtful. The propensity to sleep after eating, is commonly the same in man as in brutes; and I am persuaded, that, in elderly persons, after a mid-day meal, it may, in some degree, be indulged in; but I am equally persuaded, from my observation and experience, that a full supper, immediately before going to bed, is generally hurtful. Whether this happens in those persons especially, who take two meals of animal food every day, or that a long sleep after such a

meal, during which, not only the animal, but also the natural and vital functions should have a great deal of rest, is the cause of the bad consequences which often follow, we cannot positively determine.

"The solution of this, and many such questions, is much embarrassed by this, that errors in the conduct of what relates to health, when moderate in their degree, do not immediately show their effects; and only after a long time, in consequence of frequent repetition, when, from our gross ignorance of the animal economy, we do not perceive and readily mistake the cause of the disease then arising." *Cullen.*

As our ease, health, and prospect of longevity, depend much on an easy and speedy digestion of our food, and on a due conversion and assimilation of the alimentary fluids into a mild and nutritious chyle, it behoves all, not only valetudinarians, but persons in perfect health, to avoid carefully all kinds of food, which are found, on experience, to disagree with the process of digestion, or to retard it; and as studiously to shun excess or even satiety in quantity; for, by frequent and reiterated irregularities in either of those ways, the tone of the stomach becomes, sooner or later, debilitated and impaired; and the disorder, termed dyspepsia or indigestion, with all its disagreeable and distressing symptoms, is not unfrequently induced. And it is, moreover, by indulgence and gratification at this meal, that obesity or a corpulent habit, which, in a great degree, is now considered as a disease, is generated and increased: wherefore, it may not be wholly improper to add a few observations or authorities on those morbid states of the body.

"Loss of appetite and indigestion sometimes arise from relaxation, or local imbecility of the sto-

mach; and none are more subject to such complaints, than those who lead a sedentary, monastic life, and are intemperate in eating and drinking. Under such circumstances, the ingesta will be imperfectly subdued, and the quantity taken into the body being more than equal to its consumption, a bloated anasarcous habit will ensue; particularly, as the natural excretions, for want of sufficient exercise, will be unduly performed: hence, the solids being daily more distended by the weight of the redundant fluids, the balance, which ought to be preserved between those two powers, will be destroyed, and the body daily decline from its usual strength and vigour.

"When the stomach is repeatedly overcharged with full meals of animal food, it will lose its natural tone by such frequent plenitude, and over-distention; and its contents being indigested, the chyle obtained from it will be crude, impure, and insufficiently elaborated. The several secretions being, also, unduly performed, a foundation will be laid for chronic diseases, especially the gout and scurvy, a dropsy, and hypochondriacal disorders; so that, one train of evils leads on to another; but, if they are not the effect of a bad constitution, but of that indiscretion which tends to make it so, their cure is not to be sought for in the use of medicines, but in moderation and temperance. Let the patient take less food, and more exercise, and he will not want a physician.

"From whatever cause the stomach is deprived of its natural digestive faculty, it may be laid down as a general rule, that spare diet, and abstinence from solid animal food, will afford relief. By such means, the patient will avoid the inconvenience of sleepiness, palpitations of the heart,

flushings in the face, with hectic fever, and other symptoms after eating, so oppressive to the weak and infirm.

"The propriety of spare diet will appear more particularly necessary for such invalids, as they generally use less exercise, and perspire less than others. Their solids are also more lax, and, consequently, their digestion is weaker.

"If the patient, after eating, is much oppressed, sleepy, and affected with internal throbbing about the region of the heart; in a word, if his body and mind are less vigorous and fit for action than before, he has then exceeded the proper quantity of food, and should take care to subtract from it at the next meal.

"The regimen of diet should not only be adapted to particular ages and constitutions, but also to the nature of climate, and the degree of the patient's exercise. When the quantity of food is too great, the vessels will be overloaded, and the body oppressed; if too small, it will waste and decline.

"Excess impairs the distinct exercise of the reasoning faculties, and renders the perceptions of the mind dull and unfit for study, or deep meditation. In a word, whatever destroys the true balance between the solids and fluids, will produce sickness and diseases; so that, either too high or low living may injure health; but, of these extremes, the first is infinitely most common, and productive of danger; since the several instances of longevity are chiefly to be found among those who live on spare and simple diet. On the other hand, men who are intemperate, and fill their vessels to the extreme of bursting, frequently die, before their natural time, of apoplexies, or other violent diseases.

"The good effects of temperance are acknowledged by all, but duly regarded by few.

"As loss of appetite is usually attended with nausea, or loathing of food; so, indigestion is accompanied with flatulency and oppression, a bitter and disagreeable rancid taste in the mouth partaking of the food; sour eructation, with heartburn, flushing in the face, and a slow hectic fever.

"In those of weak appetite and bad digestion, who live chiefly on vegetable diet; a redundant acid at the stomach frequently prevails, with excessive flatulence, cardialgia, or heartburn. To remedy this inconvenience, it will be proper for the patient to increase the quantity of animal food, and to indulge moderately with things of a warm alkalescent nature, such as horse radish, mustard, &c. Instead of wine or malt-liquors, pure water, with a small portion of brandy, without sugar, will be less apt to ferment and occasion wind. This regimen, however, should be pursued with caution; for a total abstinence from vegetables, and the too liberal use of animal food, would dispose the fluids to a dangerous state of putrefaction; therefore, the most wholesome diet will be found in a due proportion of animal and vegetable substances, which may be varied occasionally, according to the nature of circumstances.

"A fresh supply of food, before the last meal is evacuated from the stomach, or whilst any of its indigested sour leaven there remains, is highly pernicious; since it would soon excite fermentation in the next aliment, and convert it into its own acid nature, creating flatulence and heartburn.

"In such cases, it will be proper to wash the stomach with a weak infusion of mustard-seed; and, after giving a drachm or more of calcined magnesia

as a laxative, to diminish the quantity of food, and to take it the oftener." *Leake.*

"Abstemiousness and excess are alike causes of indigestion. An over-distention of the stomach may, in some measure, injure its proper tone; and long fasting, by inducing a bad quality in the juices secerned into the stomach, renders it feeble, and generates wind. Hard drinking, and any of the causes of anorexy, also injure the indigestion. The colombo root is said to be particularly useful when the stomach is languid; the appetite defective; digestion with difficulty carried on; or, when a nausea, with flatulency, attends. It is prescribed in substance, with any grateful aromatic, or infused in Madeira wine, now and then interposing gentle doses of the tincture of rhubarb. A mixture of mustard-seed, with the colombo root, is of admirable utility in complaints of this kind; particularly where acidity and flatulence prevail much in the primæ viæ.

"The fat is augmented by the use of much animal food, or of any other that is oily and nourishing, provided the digestion be good; by the use of strong drink, especially malt-liquor; by much rest of body and mind; much sleep and inactivity; castration; cold; repeated blood-letting; and, in general, by whatever diminishes the vital and animal powers. Much, however, depends on the constitution of the body itself; nor is it possible to fatten a human creature at pleasure, like an ox. A certain degree of fatness, according to the age of the person, is a sign and effect of good health; but, when too great, it becomes a disease of itself, and the cause of other diseases. It may always be very certainly removed by strong exercise, little sleep, and a spare and solid diet.

"Therefore, the principal use of rules must be with a view to prevention; and persons who are disposed to corpulency, should take care in time to prevent it from becoming an absolute disease, by using a great deal of exercise; not indulging in sleep; and abridging their meals, especially that of supper. Salted meats are less fattening than such as are fresh; and drinking freely of coffee is recommended to corpulent people.

"But Dr. Fothergill observes, that a strict adherence to vegetable diet reduces exuberant fat more certainly, than any other means that he knows; and gives two cases wherein this regimen succeeded remarkably well. The famous Dr. Cheyne brought himself down in this way, from a most unwieldly bulk, to a reasonable degree of weight; as he himself informs us. It deserves, however, to be remarked, that every practice for the removal or prevention of fatness, must be used with great caution and prudence: for not a few, anxious to prevent this affection, have had recourse to a regimen and to medicines, which have proved fatal. This has particularly arisen from the excessive use of acids, probably operating by entirely destroying the action of the chylopoeitic viscera."

Encyclop. Britann.

Before I proceed to supper, it may be expected, that I should say something on the intermediate repast of tea, which has become almost as common in the afternoon, as any other meal; particularly in cities and towns, and increasingly so, of late, in the country. Coffee is used by some, instead of tea, though rarely, at this time.

My opinion of the nature and effects of both tea and coffee, will be understood from what I

have already said, when treating of those articles under the head of breakfast.

It is thought, by some, that tea assists and promotes digestion; and it is, therefore, sometimes used immediately or soon after dinner; but this is to be doubted more than can be imputed to any other diluent liquid or drink; a certain proportion of which is necessary to be added to our food, or rather intermixed with it, during mastication; but too much drink, immediately after eating, rather retards than promotes digestion.

Short-cakes, sweet-cakes, and different kinds of confections or sweet-meats, are often eaten at this repast; but most of them are unfavourable to an easy and speedy digestion; sometimes occasioning certain distressing symptoms, such as giddiness, heartburn, or head-ach; complaints usually and erroneously ascribed to other causes; but are the undoubted consequence of a mixture of heterogeneous substances, or of such as are of a hard, fermentative, or indigestible nature. Indeed, it is unreasonable to suppose, that, soon after eating a plentiful dinner, perhaps, of animal food, which is unquestionably several hours in digesting, an additional meal of substances, that rather pall than strengthen the digestive faculty, should be conducive to health. And it has sometimes been observed, that the food of dinner has been puked up late in the day, after such repasts.

"There is another repast, which, since the introduction of tea, is become a kind of necessary of life, and as much expected in every family, as the other usual meals themselves. It may not, perhaps, be wholly improper to suggest some considerations, respecting the use of tea and coffee after dinner. If we may judge from various cir-

cumstances, from the time of dinner, digestion is performing during the course of several hours. This operation requires labour and time in performing it, more or less, in proportion to the quantity of food taken in, and the powers of digestion. Much food taken into a weak stomach, requires a greater length of time, if it is digested at all, than where less has been received.

"Whilst that power, which we call nature, is performing this task, a second meal is added, which, though of a lighter quality, adds to the quantity; and as it must be assimilated to the chyle now forming, is an additional burthen. To the robust, this may appear trifling: it is not felt; but to those, who may be said to be barely not valetudinary, it is a matter of some consequence.

"It is thought, by many, that tea assists digestion, by the additional stimulus of its quantity: it may excite the stomach and duodenum to pass the digesting food sooner than they otherwise would have done, and sooner than the chyle is properly elaborated: it may, perhaps, assist in carrying off flatulency and the food together. This, at least, is my opinion of it; and I therefore think, the subjects of whom I have been speaking, ought to drink either tea or coffee with great moderation; never to make it sweet, coffee especially; and to eat with it as seldom as possible. For, either sweet-cakes, cakes of any kind, or butter in any proportion, rather retard digestion than promote it. The only proper time to drink either tea or coffee, or any such beverage, with safety or advantage, is, to take it as soon after dinner as possible, and instead of sitting down to the bottle.

As on the due performance of digestion, depends much of our health, ease, and prospect of

longevity; so, we ought most studiously to avoid every thing that has a probable chance of interrupting it." *Fothergill.*

"Tea will induce a total change of constitution in the people of this country. Indeed, it has gone a great way towards effecting that evil already. A debility, and consequent irritability of fibre, are become so common, that not only women, but even men are affected with them. That class of diseases, which, for want of a better name, we call nervous, has made almost a complete conquest of the one sex, and is making hasty strides towards vanquishing the other.

"Did women know the train of diseases induced by debility, and how disagreeable these diseases render them to the other sex, they would shun tea as the most deadly poison. No man can love a woman eaten up with vapours, or washed down with diseases arising from relaxation." *Buchan.*

"Avoid, likewise, the excessive use of hot drinks, such as coffee, chocolate, and tea, particularly the last, in which the inhabitants of this country indulge more than in any other beverage. I scarcely dare venture to impeach this favourite solace of our morning and evening hours; but, with all due deference to the happiness of the domestic circle, I consider it as my duty to denounce the too liberal use of this liquor, as not a little prejudicial to the fairness and purity of the skin. Tea, taken hot, and in immoderate quantities, not only has a tendency to weaken the organs of digestion, but causes fluctuations and congestions in the humours of the face, and frequently brings on a degree of debilitating perspiration. Let us conceive the stomach, inundated with a quantity of warm water just at the time of digestion: its concoctive

powers are literally drowned at the very instant when their assistance is most required; and, instead of a pure balsamic chyle, or alimentary fluid, it prepares crude and acrimonious humours, which can only generate an impure mass of blood. Here, I cannot impress upon the attentive reader, in terms sufficiently strong, the following truth: 'That a healthy stomach only can produce healthy uncontaminated fluids; and, that two-thirds of what we call acrimony, or sharpness of humours in the system, proceed from a languid stomach and irregular digestion.' If, therefore, the tea be made too weak, it will operate merely as warm water, and, as such, relax the coat and membranes of the stomach; if made too strong, it will give an unnatural heat to the body, prove a dangerous stimulus to the nerves, occasion palpitations of the heart; a general tremor, cramps, and a number of other complaints, which it is needless to enumerate. That these effects do not take place, during the first months or years of indulging ourselves in the intemperate use of hot strong tea, is no argument to controvert this position: they will, either sooner or later, unavoidably follow." *Willich.*

"As to the properties of tea, they are strangely controverted. The eastern nations are at least as much possessed with an idea of their extraordinary virtues, as the Europeans; but it is, perhaps, because imagination bears as great a sway there, as here. The immoderate use of it, however, has been very prejudicial to many, who have been thereby thrown into the diabetes. In Europe, infusions of tea-leaves have been extravagantly condemned by some, and commended by others.

"From the contradictory opinions, even of medical writers, on this subject, the natural inference

seems to be, that they possess neither noxious nor beneficial powers in any very considerable degree. They seem, when moderately used, to be, for the most part, innocent; in some cases, they seem to be salutary; in some, they are apparently prejudicial. They dilute thick juices, and quench thirst more effectually, and pass off by the natural emunctories more freely, than more watery fluids: they refresh the spirits in heaviness and sleepiness, and seem to counteract the operation of inebriating liquors. From their manifest astringency, they have been supposed to strengthen and brace up the solids; but this effect experience does not countenance; as it is in disorders, and in constitutions, wherein corroborants are most serviceable, that the immoderate use of tea is peculiarly hurtful; in cold indolent habits, cachexies, chlorosis, dropsies, and debilities of the nervous system. *Lewis's Materia Medica.*

"Dr. Lettsome has particularly inquired into the medical qualities and effects of tea; and having observed, that infusions of bohea and green tea contribute to preserve sweet some small pieces of beef immersed in them, he infers, that they possess an antiseptic power, when applied to the dead animal fibre; and from their striking a purple colour with salt of iron, he deduces their astringent quality. From other experiments, he concludes, that the activity of tea chiefly resides in its fragrant volatile parts; and that, if the use of it be beneficial or injurious to any particular constitution, it becomes so principally by means of this odorous fragrant principle. He apprehends, that it is the safest course to use the infusion of the more ordinary kinds of this plant, which abound less with this fragrant principle. Or, the tea may be boiled

a few minutes, in order to dissipate this volatile part, which stands charged as the cause of those nervous affections, that are said to be produced, or aggravated, by the use of this liquor. By this process may, likewise, be extracted more copiously the more fixed, bitter, and stomachic parts of this vegetable.

" Dr. Lettsome, who seems to be thoroughly persuaded of the occasional noxious effects of this volatile principle, in the finer teas especially, recommends this last-mentioned mode of making tea, or the substitution of the extract, instead of the leaves; by the use of which, the nervous relaxing effects, which follow the drinking of tea in the usual manner, would be, in great measure, avoided. This extract has been imported hither from China, in the form of small cakes, not exceeding a quarter of an ounce each in weight; ten grains of which might suffice one person for breakfast: but it might easily be made here by simple decoction and evaporation, by those who experience the noxious qualities of the volatile principles of this plant.

" Tea is, perhaps, less injurious than many other infusions of herbs, which, besides a very slight aromatic flavour, have very little if any, stypticity to prevent their relaxing, debilitating effects. So far, therefore, tea, if not too fine, if not drunk too hot, nor in too great quantities, is, perhaps, preferable to any other known vegetable infusion. And, if we take into consideration, likewise, its known enlivening energy, our attachment to it will appear to be owing to its superiority in taste and effects to most other vegetables. See Dr. Lettsome's Natural History of the Tea-tree, with Ob-

servations on the Medical qualities of Tea, and effects of Tea-drinking. 4to. 1772."

Hall's Encyclop.

Instead, therefore, of the repast of tea, especially to those who do not make it serve for supper, I would propose and recommend fruit to be eaten in the afternoon; which is, I think, the most proper time for that purpose. I do not mean, however, until some time after dinner, when that meal may be supposed to be mostly digested, and to have passed out of the stomach.

This might lead me into a consideration of the nature, use, and preference, of the different kinds of fruit; but they are so numerous, that I shall not swell this treatise with an enumeration of them, but shall leave them to every person's own choice and experience. And, I think, that a frequent and plentiful use of most kinds of ripe summer fruits is salutary, and not likely to be productive of the bad consequences, which constant and excessive eaters of animal food do often experience. It has, however, been observed, that certain kinds of acid or sour fruits, eaten raw, and not fully ripe, have, sometimes, occasioned colic pains, or other complaints in the alimentary canal; which, when observed to have that effect, should, therefore, always be boiled or cooked: in which state, they may be safely eaten, by most people, with milk.

It ought, also, to be observed, that most kinds of the drupaceæ or stone-fruits, are not so innocent, safe, and wholesome to be plentifully indulged in, as others: and, that the practice of swallowing the kernels or stones of fruit, though it may have been frequently done with impunity, is, by no means, commendable, nor always safe,

as will appear from facts which I shall soon adduce. Peaches and apricots may, however, if thoroughly ripe and mellow, be freely and safely eaten by most persons; and are an exception to the above general remark.

Unripe plums, sour pears, and stale nuts, ought to be used sparingly, or altogether refrained from; as their liberal use has often occasioned severe bowel complaints. The last should always be ground or pounded for old and toothless people. It is thought, by some, that salt or spice is an healthy addition to them.

"The mischiefs arising from the custom which many people have of swallowing the stones of plums and other fruit, are very great. The Philosophical Transactions give an account of two particular instances; and one of a man, who, dying of an incurable colic, which had tormented him many years, and baffled the effects of medicine, was opened after death, and, in his bowels, was found a ball of an oval figure, being six inches in circumference, and weighing an ounce and an half: in the centre of which was found the stone of a common plum, surrounded with several coats of a hard and tough matter.

"These, and several other instances mentioned in the same place, sufficiently show the folly of that common opinion, that the stones of fruits are wholesome. For, though by nature, the guts are so defended by their proper mucus, that people very seldom suffer by things of this kind; yet, if we consider the various circumvolutions of the guts, their valves and cells, and, at the same time, consider the hair of the skins of animals we feed on, the wool or down on herbs and fruit, and the fibres, vessels, and nerves of plants, which are not altered

by the stomach, it will appear a wonder, that instances of this sort of mischief are not much more common. Cherry-stones swallowed in great quantities, have occasioned the death of many people; and there have been instances even of the seeds of strawberries, collecting into lumps in the guts, and causing violent disorders, which could not be cured without great difficulty." *Encyclop. Britann.*

"It belongs, also, to the business of diet to remark, that persons do often take in unripe fruits in considerable quantity; and much has been said of the danger attending such a practice; which is certainly, in some measure, well founded. The firmer texture of these unripe fruits is more difficultly dissolved; they remain, therefore, long in the stomach unmixed with the other fluids; and they are, therefore, liable to acquire a greater degree of acidity, and to give all the disorders that may arise from that in too great abundance. There are, indeed, stomachs whose gastric liquor may obviate all this; but, certainly, in many cases, it may fail; and, therefore, the taking in of unripe fruits is always hazardous, and may be very hurtful.

"We can hardly omit here saying what may, perhaps, be understood from what has been said already, that, though fruits in their ripest, be, at the same time, in their most perfect state, they may, however, even in this state, be taken in too large quantity; and, in that case, being in overproportion to the quantity or powers of the gastric liquor, they may go too far in an acescent fermentation, and give all the disorders that may arise from too acid fruits: and this will especially happen from fruits which have still, in their ripest state, a large proportion of acid in their composition.

"For the sake of young students, we shall more particularly observe, that the drupaceæ, or stone-fruits, have commonly a larger proportion of acid with respect to their sugar, than some other fruits; and, therefore, in their recent state, they are commonly and justly supposed to enter more readily into a noxious fermentation, and to produce those consequences of morbid acidity, colic, and diarrhœa, which we have mentioned above. This is especially, and, perhaps, justly, supposed with respect to the cherry and plum kind; and, we believe, may be equally supposed with respect to the peaches produced in the open air in Britain; but, we are disposed to judge the apricot, in these respects, to be the safest of the drupaceous tribe.

"To conclude the subject of fruits, we shall consider a question, which has been frequently stated; and that is, Whether recent fruits are most safely and usefully taken before, or after a meal, or the use of other food? The answer seems to be very obvious. In dyspeptic stomachs, or those which do not easily or powerfully overcome acescency, the taking in of acescents must be less safe before a meal, than after it. In the case of stomachs powerful in the digestion of acescents, these may be commonly taken safely before meals, and, possibly, often with advantage, as they may excite appetite and favour digestion. In the most part of stomachs, fruits, in moderate quantity, are safe after meals; and, when these have consisted of much animal food, the use of fruits is generally proper; though, in certain dyspeptics, the large use of them may not be always safe.

The use of the dried fruits is certainly safer than that of the recent, before meals; but, even the dried fruits cannot be taken, in that condition,

with sufficient safety by the dyspeptic. As I am well persuaded of the nutritious quality of dried figs, I can hardly believe, with Linnæus, Amaen. I. 136. that a large quantity of these can be taken before a meal without any diminution, and rather with an increase of appetite.

"With respect to the use of fruits, there is still a question to be mentioned. In many countries, particularly in Britain, both recent, boiled, and preserved fruits, are often taken with milk: and this practice has been condemned by Spielmann; but, as I judge, without reason. In this country, the practice is almost universal, without our observing any mischief arising from it. Such experience is the most secure foundation for concluding, that the practice is not hurtful; but it may be further added, that the supposition of the consequences arising from it is not well founded. It is supposed, they may arise from the coagulation of the milk in the stomach; but this happens to, perhaps, every portion of milk taken down into it; and, therefore, certainly happens, for the most part, without any bad consequence. Further, however, we judge the milk may be useful by involving a portion of the acid, as it has been often found to be a cure for heartburn. If it happens, as commonly, that the oily part of milk is employed, it is probable, that the coagulum will not be very firm, and, also, that the acid will be more properly and fully involved. As we are persuaded, that the animal fluid is always formed of acid, sugar, and oil, so, I judge, the mixture of these in diet to be not only allowable, but very proper; and, therefore, that cream, with strawberries, and butter, with apple-pie, make a very proper diet."

Cullen.

Section 3. *Supper.*

The food eaten at this meal, is very various in different countries, and with different people. That most commonly used here, is, either tea, coffee, chocolate, or milk, with the usual additions; and, with some, different kinds of animal food; upon each of which, I have already given my opinion so fully, that it will not be necessary to repeat the same here; but shall only now show their particular use at this meal.

Tea and coffee make light and easy suppers; and this is their most proper use in the afternoon. Some think, that they cause watchfulness; others, however, that they dispose to sleep; but I have not been able to observe any certain or general effect either way; unless drunk very strong, when the former sometimes takes place.

Chocolate and milk are more heavy; but, when diluted, are very suitable for this meal. The different preparations of maize, or indian corn, such as hasty-pudding and samp, are much used in the country for supper; and are, at all times, wholesome additions to milk. Rice is, also, a very suitable and agreeable addition to milk, but not so commonly eaten in this country, as the above.

Different kinds of animal food are used, by some, for supper; and this practice is more common in cities than in country places; but not advisable, or to be encouraged; as much animal, or other solid food, that is heavy and hard of digestion, contributes to restlessness and unsound sleep.

I have seen some, who said, they could not eat milk, and who would make a plentiful supper of animal food: which is to be imputed, in great measure, to their not being accustomed to the for-

mer, and to their stomachs' being in a diseased state; for I have rarely known instances of persons, inured to milk from their infancy, who could not eat it thrice a-day. I have observed flesh, and other full suppers, to occasion fetid breath, foul mouths, and furred or rotten teeth.

Some are in the practice of abstaining from suppers altogether, which is commendable and advisable, especially for immoderate eaters; and may well be dispensed with by those who partake of the afternoon repast of tea; but it is better to leave part for supper, than to overeat at dinner.

The constitutions of people are injured and worn more by gorged or overloaded stomachs, especially at night, than they are by laborious exercise.

Apoplexy and palsy are not uncommon consequences of full meals and over-distended stomachs, after dinner and supper; especially when long fasting has preceded.

I have, heretofore, recommended early and regular hours for eating the several meals; to which, I may now add, that supper ought to be taken two hours, or one, at least, before bed-time.

CHAPTER IV.

SLEEP.

SLEEP is not much less necessary to health than food, though not required so often. Night seems the most proper time for enjoying this refreshment; for, although a great part of the day, as well as of the night, is devoted to it by some, yet the former season rarely yields that relief which the latter does.

A want of sleep impairs the animal faculties, and enfeebles the whole system; and, when too much indulged, is followed with nearly the like effects; and it moreover gives a softness and idleness to all our actions: which shows, that there is a certain proportion of it necessary to the health and vigour of both body and mind; but what this proportion is, may be difficult to ascertain, as it is practised so variously in different countries, and by different people; some nations or individuals spending almost half of their time that way. However, in this, as in other things, I know no better way to arrive at the truth, than by observation and ex-

perience; which, according to the best of mine, are, that about seven, or at most, eight hours in twenty-four, are sufficient for sleep. It is well known, that, not only certain constitutions, but some periods of life, require more sleep than others: these are, infancy and old age; but there is reason to apprehend, that it may be indulged to excess in both of these states.

It is observed, that acute pain, brisk exercise, cold, and heat; and, in short, whatever occasions a violent excitement or exhaustion of the powers of the system, induce or require sleep; and, I think, that more is necessary in warm, than in cold weather; though I do not mean to recommend, but to discourage the practice of lying a-bed late; and I would prefer going to rest early, and rising about with the sun, even in the shortest nights; and, for those, whose constitutions, inclinations, or exercise requires more sleep, to take a nap at mid-day, not exceeding, however, an half, three quarters, or, at most, an hour; for longer reposes occasion heaviness and dulness, both of body and mind; and have been frequently followed by apoplectic fits, especially after a plentiful meal of animal food, the use of strong liquors, or a violent fit of passion.

It is judged most conducive to quiet sleep, and to health, to lie with the head highest, and rather on the right side, especially in the evening, in order that the aliment may more easily pass the pylorus, or lower orifice of the stomach, which is on that side.

Hard beds are more healthy than soft; and hair mattresses are greatly preferable to feather-beds, especially in hot weather; when they are, likewise, much more comfortable: and instances are not

wanting of persons of certain constitutions and complaints, who can scarcely sleep on feathers. A sacking bottom, without either bed or mattress, is very cool and tolerable in hot weather; and will be found most comfortable for persons in fevers, and for those troubled with hot and restless nights. It is well to lie under covering as thin as is comfortable; though mattresses require rather more than feather-beds. The custom of sleeping under down or feather covers, although very comfortable and practised by many, is, by no means, to be preferred as most healthful. I need scarcely remark, that, if feather-beds are used, they ought to be well aired every day.

It is judged not so conducive to health to sleep constantly in a close room where fire is kept, unless the apartment be damp, and the fire become necessary to dry it, and the furniture. It is imprudent to sleep with the head under the bed clothes, (as is the practice of some,) even in the coldest weather. It is, also, unhealthy for children and young persons to sleep long, or constantly, in the same beds or rooms with people who are unwell, and who are far advanced in life. It is, likewise, most agreeable and healthy for persons who live in cities, to retire out of town to sleep, especially in the summer season, where their rest will be found more refreshing than in crowded impure places.

A hard bed gives a pressure, support, and firmness to the muscles; and, thereby, enables the body to bear exercise and hardships better: and it is very uncommon to see persons, accustomed to such lodging, complaining of rheumatic, or other pains of the loins.

The practice of sitting up till past mid-night, and of lying a-bed late, converting, as it were,

night into day, and the reverse, cannot be sufficiently discouraged and reprehended, although it is much indulged, as if sleep were more refreshing in the day-time, than in the night; which is directly the reverse.

Too much pains cannot be taken to avoid lodging in damp houses, beds, and clothing; and not to sleep with open windows admitting a current of air on the bed, especially after midsummer. And, unless dampness render it necessary, the constant practice of warming the bed is not advisable, which may be better dispensed with, if flannel sheets be used; which, as well as flannel otherwise next to the skin, I, by all means, recommend and prefer, on account of both health and comfort.

It is, also, very imprudent to sleep on the bare ground, either by day or night; especially in the hot sunshine; for, by it, phrensies, apoplexies, &c. have been suddenly induced.

It is doubted, whether mental or bodily labour requires most sleep. The most approved authorities, which my observation induces me to join, are in favour of the former part of the question; although, I think, it may be too much indulged by persons employed in deep mental researches.

It is also questioned, which is the most suitable time to take the nap about mid-day, before or after dinner? I see no impropriety in indulging it after that meal, provided it be eaten in moderation, and the repose be confined to the time above limited. A sitting or reclining, is preferable to an horizontal posture for this purpose; and is much safer, particularly for persons of apoplectic habits, and those who have had fits of that disorder.

It is better, however, for immoderate eaters, and persons who have incautiously eaten a full meal of

animal, or other solid indigestible food, to walk about a little; to use some of the means already mentioned in such cases; and not to recline or sleep too soon afterwards; as, by inattention to this, apoplexies and the like disorders have sometimes followed.

In order to enjoy sound, sweet, and refreshing sleep, as well as for the preservation of health in general, it is best to eat light suppers, and to avoid diet of an indigestible nature, to shun the consequence lately mentioned.

All persons, on retiring to rest, especially those of sanguine temperaments, short necks, and of apoplectic habits, should loosen their shirt collars, if tight, and avoid all unnecessary bandages and coverings about the neck and head. Such should, also, be careful, at all times, both in standing and lying, particularly when at work, and the head hanging down, to avoid a contorted position of the neck; for, by this means, the diameter of the vessels is lessened, and the refluent blood is prevented from returning from the head; and instances have occurred of apoplectic fits being the consequence.

To render our sleep natural, easy, and composed, no noise nor lights should be suffered in bed-rooms, except when necessity requires it; for our sleep is not only rendered less quiet and sound where they are allowed, but the burning of candles, and lamps in particular, as well as respiration, tends greatly to contaminate the contained air of such places: When a light is necessarily kept in the night, it may be placed on the hearth.

Large spacious apartments should always be chosen for lodging-rooms. especially in cities, where the air is much vitiated; and they should be

frequently aired by raising the windows; which, however, should not be left far open whilst persons are asleep in them. Persons sleeping in small, confined rooms, will find an advantage in avoiding all close curtains about their beds.

"With regard to sleep, Dr. Gregory observes, that its use is sufficiently apparent from the effects which it produces in the body. It restores the powers both of mind and body when exhausted by exercise, giving vigour to the one, and restoring its wonted alacrity to the other. It renders the muscles again active and moveable, after they have become wearied, rigid, painful, and trembling by hard labour. It moderates the quickness of the pulse, which usually increases at night, and brings it back to its morning standard. It seems, also, to assist the digestion of the aliment; lessens both the secretions and excretions; and renders the fluids thicker than otherwise they would be, especially in a body endowed with little sensibility or mobility. Hence, sleep is not only useful, but absolutely necessary for preserving life and health; and is a most excellent remedy, both for alleviating and totally removing, a great many diseases.

"Want of sleep is hurtful in a great many different ways, especially to the nervous system. It renders the organs of sense, both external and internal, as well as those of every kind of motion, unfit for performing their offices. Hence, the sensations are either abolished, or become imperfect, or depraved; and hence imbecility of mind, defect of memory, a kind of delirium, mania itself, pain of the head, weakness of the joints, an imperfect or inordinate action of the vital organs; quickness of pulse, heat, fever, depraved diges-

tion, atrophy, leanness, and an increase of perturbation of the secretions and excretions.

" Sleep may be prevented, both in healthy and sick people, from various causes; such as strong light, noise, pain, anger, joy, grief, fear, anxiety, hunger, thirst, vehement desire, motion of the body, memory, imagination, intense thought, &c. On the other hand, sleep is brought on by a slight impression on the organs of sense, or none at all; by the humming of bees; the noise of falling water; cold and insipid discourse; or, lastly, by such an exercise of the memory, as is neither too laborious nor disturbing to the mind. Too great an impulse of the blood towards the head, such as often happens in fevers, prevents sleep; but a free and equal distribution of the blood through the whole body, especially the extreme parts, frequently brings it on. Whatever weakens the body, also, favours sleep; hence, various kinds of evacuations, the warm bath, fomentations, sometimes heat itself, are useful for promoting it. It, also, comes on easily after taking food, or indulging venery; the violent sensation being then quieted, and the body itself somewhat weakened. Cold produces a deep sleep of long continuance, not easily disturbed, and often terminating in death. Lastly, there are certain substances which, when applied to the body, not only do not excite the nervous system, but plainly lay us asleep, and render us unfit for sensation: of this kind, are those called narcotics, as opium, and the like; among which, also, we may reckon wine taken in too great quantity. Lastly, watching itself is often the cause of sleep; because, while a man is awake, he always, more or less, exercises the organs of his body, by which the nervous influence

is diminished; and thus, the more violently the body is exercised, in the same proportion, is a person under a necessity of sleeping.

"Sleep is deficient in many diseases; for there are few which do not excite pain, anxiety, or uneasiness, sufficient to prevent the approach of sleep, or to disturb it. Fevers generally cause those who labour under them to sleep ill; as well, on account of the uneasiness which accompanies this kind of diseases, as by reason of the impetus of the blood towards the head being frequently increased; and, likewise, from the stomach being disordered, loaded with meat, or distended with drink.

"Hence, also, we see the reason why many hypochondriac and hysteric patients sleep so ill; because, they have a bad digestion, and their stomachs are disposed to receive many, though frequently slight disorders; the slightest of which, however, is sufficient to deprive the patient of rest, provided the body be already irritable, and endowed with too great a share of mobility.

"Want of sleep will hurt in diseases, as well as in health; and for the same reason; but in a greater degree, and more quickly in the former, than in the latter; and is, therefore, not only a very troublesome symptom of itself, but often produces other very dangerous ones.

"Too much sleep, on the other hand, produces many mischiefs, rendering the whole body weak, torpid, and lazy; and it even almost takes away the judgment. It, also, disturbs the circulation, and diminishes most of the secretions and excretions. Hence, plethora, fatness, flaccidity, and an inability for the common offices of life. The causes of this excess are, either the usual causes of sleep above mentioned increased beyond measure, or

some fault in the brain, or a compression of it by an extravasation of the humours; or, sometimes, as it would seem, from great debility produced from an unusual cause, as in those who are recovering from typhus fevers and other diseases. In these examples, however, this excess of sleep is, by no means, hurtful; nor even, perhaps, in those cases where an excess of grief continued for a long time, or a great fright, has produced a surprising and unexpected somnolency. Lastly, many people have accustomed themselves, and that not without a great deal of hurt to their constitutions, to sleep too much. Nor are there examples wanting of some, who have passed whole days, and even months, in sleep almost uninterrupted."

Encyclop. Britann.

"Persons troubled with hypochondriasis and hysterics, do themselves much injury by sleeping too long, especially in the morning, when the body is enfeebled by its continuance in a heated and unwholesome atmosphere. To such individuals it is, also, dangerous to remain, for a considerable length of time, in a state of inactivity. Indeed, excessive sleeping is detrimental to the muscular powers of every person; to the phlegmatic especially, whose fluids will thus soon become vitiated; and sanguine temperaments thence acquire a superabundance of blood. The melancholy, whose blood circulates slowly, must suffer inconveniences in their secretions and excretions by this indulgence; and we generally find, that long sleepers are affected with costiveness and obstructions. Early rising, and timely going to bed, if persevered in, will render them more healthy and vigorous.

"The proper duration of sleep, in youth and

adults, is usually settled at six or seven hours; in children, and the aged, from eight to nine hours. Yet the individual deviations in the constitution of the body, and its various wants, scarcely admit of any precise rules. The more bodily weakness we feel, the more we may indulge in sleep, provided it be refreshing. If people in a state of health, are perfectly cheerful in mind and body, when they first awake, this is the most certain criterion that they have slept sufficiently.

"We should, however, be on our guard, not to confound the natural wants of the body with a blameable custom. For most persons habitually sleep too much, or remain longer in bed than they ought. The origin of this destructive custom undoubtedly arises in infancy, when children are permitted to sleep on very soft and warm beds, and encouraged to lie longer than is proper, from a mistaken notion, that they cannot sleep too much. By such injudicious treatment, they cannot attain a solid texture of body; and a foundation is laid for many subsequent diseases. The rickets, so very common in many families, in the present age, often originate in such indulgences, since the general relaxation of the body, and the tendency to profuse perspiration, are thus, in an extraordinary degree, promoted.

"In great disquietude of mind, and after violent passions, sleep is the more necessary, as these agitate and exhaust the frame more than the most fatiguing bodily labour. Hence, many persons never sleep so sound as when they are afflicted with grief and sorrow. A fretful and peevish temper, as well as a fit of the hypochondriasis, cannot be more effectually relieved than by a short sleep.

"As mental labours exhaust our strength more

than those of the body, literary men who employ themselves in long and profound reflections, require more sleep than others.

"He who digests easily, stands less in need of sleep than others. After taking aliment difficult of digestion, nature herself invites to the enjoyment of rest, and to sleep in proportion to the time which is required for the concoction and assimilation of the food. Excessive evacuations, of whatever kind, as well as intoxication by strong liquors, render additional sleep necessary. In winter and summer, we require somewhat more time for sleep than in spring and autumn; because the vital spirits are less exhausted in the latter seasons, and the mass of the blood circulates more uniformly, than in the cold of winter, or heat of summer, when it is either too much retarded or accelerated.

"Debilitated persons injure themselves much by sleeping in the day-time, against the order of nature; and keeping awake the greater part of the night.

"Day-light is best adapted to active employments; and the gloom and stillness of night, to repose. Debilitated young people, especially, should not sleep too much, though their weakness induce them to repose; for, the more they indulge in it, the greater will be their subsequent languor and relaxation.

"Persons who are fond of sleeping at any time of the day, are usually more indolent and heavy after it than before. A sleep after dinner ought never to exceed one hour; and it is also much better sitting, than lying horizontally; for, in the latter case, we are more subject to fluctuations of the blood towards the head, and, consequently, to head-ach.

" Some dietetical observers allege, that it is better to lie, in the evening, on the right, and, in the morning, on the left side; that, in the evening, the aliment may more readily leave the stomach, and that, afterwards, this organ may be better warmed by the liver.

" In the evening, we should eat light food only, and that sparingly; wait for its digestion; and, consequently, not to retire to rest till two or three hours after supper.

" The feather-beds in which we usually sleep, are certainly hurtful in many diseases, some of which they may even produce; for they absorb or imbibe the perspired vapours of the body, without our being able to cleanse them of these impurities; which are again re-absorbed and re-conducted through the pores, to the great injury of health. For this reason, mattresses, filled with horse-hair, or moss, are, in every respect, preferable.

" Further, it is highly improper to sleep in beds overloaded with clothes. They heat the blood more than is consistent with health, and produce an immoderate and enervating perspiration, which still more weakens the organs already relaxed by sleep.

" The old custom of warming the bed, also, deserves to be condemned; as it has a direct tendency to produce weakness and debility. This will be still more dangerous, if done with a charcoal fire, which, by its poisonous vapours, may prove very pernicious. A person who is accustomed to sleep in a cold bed, will not feel much inconvenience in the severest weather; for, after being a short time in bed, the natural warmth of the body will overcome it: as, on the

contrary, those who sleep in a warm bed will be the more liable to feel cold, as soon as this artificial heat is dissipated." *Willich.*

CHAPTER V.

EXERCISE.

A CERTAIN proportion of exercise is not much less essential to a healthy or vigorous constitution, than drink, food, and sleep; for we see, that people, whose inclination, situation, or employment does not admit of exercise, soon become pale, feeble, and disordered.

Exercise promotes the circulation of the blood, assists digestion, and encourages perspiration; all of which are, in a certain degree, necessary to a hale constitution.

It may be divided into two species, active and passive: of the former kind, are walking, running, leaping, swimming, and riding on horseback; of the latter, are sailing, swinging, friction, riding in carriages, &c.

The bounds which I have already prescribed to myself, will not permit me to enter minutely into a consideration of the different kinds or modes of exercise, which, like drink and food, must be left, in great measure, to every person's own choice and experience, carefully observing the effects which they are found to have on the constitution.

There is, however, one species of passive exercise which deserves to be particularly mentioned and recommended; more especially, as it often becomes necessary, and is peculiarly adapted for the aged and infirm, and such as cannot partake of any of the active kinds: I mean friction; which, performed either with the naked hands, flannels, or flesh brushes, may not only be of essential service to those of that description, but, by promoting perspiration and the circulation of the blood, it often becomes useful in arthritic, rheumatic, and paralytic disorders. This appears to have been in much more common use, both as a preventive and remedy, among the ancients than moderns; the former of whom called it chafing.

The effects of the want of exercise are more apparent and destructive, when conjoined with high living and strong drink: hence, the gout and many other diseases are generated: indeed, so evidently so, that it is now become an almost established fact, that, that disorder will never appear, where sufficient exercise, with abstinence from animal food and wine, is practised.

It is a fact which long experience has taught, that idleness and luxury create more diseases than labour and industry; which shows, that an indolent and inactive, as well as an over-delicate and refined mode of life, is inimical to health and longevity: hence, the greater number of disorders in cities, where the inhabitants live high, and use but little exercise, than in country places, where they labour more, and live more sparingly.

A due medium ought, however, to be observed in exercise, as well as in the other nonnaturals; for, although so necessary for preserving health, it should be used gradually and discreetly, especi-

ally by persons unaccustomed to it; and, if it be continued to overfatigue, it weakens, more than it strengthens the body. Laborious exercise should be carefully avoided, both on a full, and an empty stomach.

After violent exercise, while the pores of the skin are open, the body should not be suffered to cool suddenly, but be kept, for some time, in nearly the same temperature, and in gentle motion. At such times, we should carefully avoid sitting in a current of fresh air or wind.

I have heretofore remarked, that excessive drinking and eating have destroyed many; and, I also believe, that many suffer greatly in their health for want of sufficient exercise, particularly in cities and towns, where people live luxuriously, and exercise but little.

And there is no reason to doubt, that a large proportion of the children born in such places, not only suffer materially in their health, but may be said to fall victims in their infancy, for want of pure air and sufficient exercise; and, that, if they should live to survive that uncertain period, they may be said to have laid the foundation for feeble and enervated constitutions in after life: which ought to be a sufficient inducement for parents and nurses in those situations, who have the lives and welfare of their offspring and charge at heart, to consider whether they furnish them with a due proportion of those essential requisites for their existence and future health.

It is well known, that certain occupations, or employments, are unfavourable to health, and productive of particular diseases: for instance; miners, painters, glaziers, potters, and others who work in lead, or inhale its vapours, are subject to

the palsy and colic; millers, flaxdressers, stone-cutters, and glass-grinders, to pulmonary consumption: to which last complaint, shoemakers, tailors, and others of confined and sedentary employments, are also subject. And it is to be feared, that the new and increasing business of manufacturing and working in gypsum, will, probably, add victims to the last-mentioned fatal disorder. So, that among all, agriculture is, perhaps, the most favourable to health and longevity, it having few or no diseases peculiar to itself, except such as may be imputed to exposure, and overdoing; which, however, rarely have so much effect in producing diseases, as we might reasonably expect. This is a confirmation, that exercise, in a considerable degree, is not much less necessary to the preservation of health, than air, drink, food, &c.

It has been a common practice to put children of weakly constitutions to sedentary occupations; and, such as are more robust, to some active or laborious business without doors; but observation and experience lead to a different conclusion; and to prefer putting those of the former description, to the latter kind of employments; and, those of the latter, to the former: for, no sooner do we see one taken from some active or laborious occupation in the open air, and put to another of a more confined nature within doors, than he immediately becomes pale, meagre, and debilitated; and, not unfrequently, of an emaciated or declining habit: and, on the contrary, it is not uncommon for such as change from a confined to a more active employment without doors, to acquire more hale and vigorous constitutions. And it is accordingly observed, that the confined and sedentary furnish the largest number of phthisical or consumptive disor-

ders, and fill the greatest part of the bills of mortality.

I would, therefore, highly recommend it to the inhabitants of manufacturing towns, and to all whose inclination or necessity induces them to follow sedentary and confined occupations, to desist frequently from them, and to spend awhile in the open air, using, at the same time, some kind of exercise, such as walking, riding, sawing, cutting, gardening, or the like; which will both render their confinement and labour less irksome, and tend greatly to the preservation of their health: and it is an object of great importance, and highly commendable, for all who are thus circumstanced, to provide themselves with land or gardens, on which they may often employ themselves, not only innocently, but usefully; and, in a manner, not a little conducive to their health.

A change from a sedentary situation is no less advisable and necessary for all persons of studious lives; who, for want of sufficient activity and exercise, often debilitate their constitutions, and lay the foundation of dyspepsia or indigestion, and other disorders that imbitter and shorten human life. Hence, arises debility, which is not only the source of numerous diseases, but may, in the present day, almost be called a disease of itself.

Exercise is not only a preventive, but a cure for many diseases, especially such as are occasioned by high and luxurious living, indolence, and a city life.

The great number of glandular obstructions, and nervous and hypochondriac complaints that occur in practice, particularly in cities, are owing, in great measure, to impure air; and the want of exercise; and might be easily prevented or cured,

in their beginning, by a change of air and sufficient exercise, joined with a suitable diet and regimen.

Exercise of some kind is, also, of great advantage to old people, particularly to those who have been accustomed to activity and labour in their former years. Those so far advanced, or infirm, as to be unable to partake of any other kinds, may have recourse to frictions.

Violent exertions, and great feats of activity are, however, at all times, to be carefully avoided; as they have been productive of certain disorders, such as hæmorrhages and ruptures.

Exercise, moreover, by increasing the circulation of the blood, promotes an equable warmth of the whole body, and obviates the sensation and bad effects of cold; and, with warm clothing, is a safer and better means of guarding against the severity and transitions of the weather than much fire and heated rooms.

Women require less active exercise than men: hence, Rousseau properly remarked, that women only should follow those mechanical arts which require a sedentary life.

"Exercise increases the circulation of the blood, attenuates and divides the fluids, and promotes a regular perspiration; as well as a due secretion, of all the humours; for it accelerates the animal spirits, and facilitates their distribution into all the fibres of the body, strengthens the parts, creates an appetite, and helps digestion. Whence it arises, that those who accustom themselves to exercise, are generally very robust, and seldom subject to diseases. But it is to be observed, that a weak man should not ride with a full stomach, but either before dinner, or after the digestion is near

finished; for, when the stomach is distended, weak people do not bear these concussions of the horse without difficulty; but, when the primæ viæ are near empty, the remaining fœces are discharged by this concussion. Sailing in a ship is, also, an exercise of great use to weak people.

"It is allowed, on all hands, that alternate motion and rest, and sleep and watching, are necessary conditions to health and longevity; and that they ought to be adapted to age, temperament, constitution, temperature of the climate, &c; but the errors which mankind daily commit in these respects, become a fruitful source of diseases. While some are bloated and relaxed with ease and indolence, others are emaciated and become rigid through hard labour, watching, and fatigue.

"The plain diet and invigorating employments of a country life, are acknowledged, on all hands, to be highly conducive to health and longevity, while the luxury and refinements of large cities are allowed to be equally destructive to the human species; and this consideration alone, perhaps, more than counterbalances all the boasted privileges of superior elegance and civilization, resulting from a city life.

"From the light which history affords us, there is great reason to believe, that longevity is, in great measure, hereditary; and that healthy long-lived parents would commonly transmit the same to their children, were it not for the frequent errors in the nonnaturals, which so evidently tend to the abbreviation of human life.

"Where is it, but from these causes, and the unnatural modes of living, that, of all the children born in the capital cities of Europe, nearly one half die in early infancy? To what else can

we attribute this extraordinary mortality? Such an amazing proportion of premature deaths is a circumstance unheard of among savage nations, or among the young of other animals! In the earliest ages, we are informed, that human life was protracted to a very extraordinary length; yet how few persons, in these latter times, arrive at that period which nature seems to have designed. Man is by nature a field animal; and seems destined to rise with the sun; and to spend a large portion of his time in the open air; to inure his body to robust exercises, and the inclemency of the seasons; and to make a plain homely repast only when hunger dictates. But art has studiously defeated the kind intentions of nature; and, by enslaving him to all the blandishments of sense, has left him, alas! an easy victim to folly and caprice. To enumerate the various abuses which take place from the earliest infancy, and which are continued through the succeeding stages of modish life, would carry us far beyond our present intention. Suffice it to observe, that they prevail more particularly among people who are the most highly polished and refined. To compare their artificial mode of life with that of nature, or even with the long-livers in the list, would probably afford a very striking contrast; and, at the same time, supply an additional reason, why, in the very large cities, instances of longevity are so rare."

Encyclop. Britann.

"As the animal juices are accumulated by nourishment and rest, and consumed by abstinence and motion; it is a circumstance of the highest importance to health, to proportion those opposite qualities duly, that the natural balance may be kept up between the solids and fluids.

"Moderate exercise is a sovereign remedy, either, in preserving, or restoring health: it increases animal heat, invigorates the heart, and promotes a free and equal distribution of blood. It assists the secretions of perspiration, urine, and stool; strengthens the appetite and digestion; renders the body less liable to the malignant influence of weather, or to the attack of putrid diseases: in a word, it animates every part of the human system; and, likewise, gives alacrity and vigour to the mind.

"The salutary power of exercise and good air, is particularly exemplified in laborious country people, who, notwithstanding their indifferent food, are generally hearty and strong. They have a much better appetite and digestion, than the rich and indolent. By increased heat consequent of exercise, the oily and watery parts of their food, such as it is, will be more uniformly mixed, and worked up into a proper degree of richness and consistence to nourish the body.

"Exercise, by walking in a dry, fresh air, is remarkably beneficial to those of weak solids, and pale watery blood; for it perceptibly increases their strength, and renders the complexion more fresh and florid. From this local alteration of the countenance, we may conclude the effect to be general; and that the blood is not only impregnated with the enlivening spirit of the air, as we have already remarked, but being rendered more fluid by an additional degree of vital heat, is capable of circulating through vessels of extreme fineness, which were impervious to it before; and, upon those simple principles, it may clearly be seen, why exercise will be found a sovereign remedy in all chronic diseases proceeding from lax fibres, and a cold cause.

"The frequent use of the flesh brush, or friction with hot flannels impregnated with the fumes of myrrh, or gum copal, thrown on hot coals, will be found of much greater benefit to those of lax solids, and a languid circulation, than is generally imagined. The patient's body and extremities should be rubbed twice or thrice a day. This species of exercise may be looked upon as a kind of gentle electricity, which will generate heat, strengthen the fibres, promote the circulation of blood, and assist perspiration: it will prevent that venous plenitude, or swelling of the veins, so frequent in advanced age: and there is another beneficial effect, which, I think, has not been mentioned, viz. friction of the body will constantly occasion the immediate discharge of wind from the stomach and bowels, by consent between the skin and those parts, merely from the principle of irritability, or that property of the animal fibre to re-act when acted upon by a gentle stimulus, and by which the contiguous parts are brought into action.

"Exercise, or bodily motion, increases animal heat by the same law of nature that the electric globe, in whirling round, collects fire; hence, it renders the blood more fluid, and promotes its free and equal distribution through the whole vascular system. Many diseases, therefore, proceeding from weakness and a defect of circulation, may, by exercise, be effectually relieved; such as nervous and hypochondriacal disorders, agues, dropsy, rheumatism, and palsy.

"Studious persons who are usually inactive, by too much rest of body, and intense exercise of mind, become weak, enervated, and hypochondriacal. The stomach loses its digestive faculty;

and the head is affected with giddiness and stupor. By the sedentary state of the body, compression of the viscera, and want of perspiration, many disorders of the stomach are brought on. The secretion of bile in the liver is thus prevented, and its passage in the intestines retarded; whence proceed costiveness and piles, the formation of calculous concretions or gall-stones, and obstruction of the mesenteric glands." *Leake.*

"To continue exercise until a profuse perspiration, or a great lassitude, take place, cannot be wholesome. In the forenoon, when the stomach is empty, or, at least, when not too much distended, muscular motion is most agreeable and healthful: it strengthens digestion, and heats the body less than after a full meal. A good appetite after it, is a proof, that it has not been carried to excess. But it is not advisable to take violent exercise immediately before a meal; as this might occasion a deficiency of those humours which are necessary to promote digestion. If we sit down to a substantial dinner or supper, immediately after a fatiguing walk, when the blood is heated, and the body in a state of perspiration, the worst consequences may ensue; especially, if we begin with the most cooling dishes, or with salad, or a glass of cold drink.

"Exercise is, likewise, hurtful directly after meals; since it obstructs digestion, and propels those fluids too much to the surface of the body which are designed for the stomach, to promote the solution of food, and, without which, many crude and undigested particles are forced to enter, and to mix with the blood.

"Persons who are under the necessity of moving immediately after their meals, or who have no other time for walking, must cautiously endeavour

to overcome these inconveniences by custom, and a more rigid temperance. They should first take the most gentle kind of exercise, and gradually increase it; and, as the late hours of dining now so generally in fashion, have, in a manner, abolished heavy suppers, a moderate walk, after a slight evening's repast, cannot be injurious. But, at all events, fatiguing exercise, after a full meal, should be delayed till the stomach has digested and assimilated the food, which generally takes place in the third or fourth hour after eating.

"Friction of the body, which can be performed, either by the naked hand, a piece of flannel, or, still better, by a flesh brush, is one of the most gentle and useful species of exercise. The whole body may be subjected to this mild operation, but principally the abdomen, the spine, the arms, and legs. It clears the skin, resolves stagnating humours, promotes perspiration, strengthens the fibres, and increases the warmth and energy of the whole system. In rheumatism, gout, palsy, and green sickness, it is an excellent remedy.

"After having taken exercise, we should not venture to rest in a cool place, nor upon a green plot; still less should we expose ourselves to a current of air; but rather frequent a place warmed by the mild rays of the sun in summer, or a moderately warm apartment in winter; so, that the sudden change of temperature may not injure us, by suppressing perspiration.

"We are now to consider the consequences arising from the want of exercise. This, indeed, is still more debilitating than too violent motion. The solid parts of the human frame are relaxed by it: the circulation of the fluids is retarded: they gradually stagnate in the smaller capillary vessels:

the secretions are diminished: and abundance of moisture or fat is generated; which renders the body, as well as the mind, more indolent and lethargic. Relaxation of the muscles, obstructions of the intestines, hemorrhoids, apoplectic fits, various species of dropsy, and, at length, a premature death, are the sad consequences." *Willich.*

"Walking is the most gentle species of exercise. It promotes perspiration, and, if not continued too long, invigorates and strengthens the system. As the most simple and wholesome drink, namely water, is within every body's reach, so this species of simple and wholesome exercise, is in every body's power, who has the use of his limbs.

To such as can bear it, walking frequently up hill is recommended. The inhabitants of mountainous countries are generally healthy and long-lived. This is commonly attributed to the purity of the air in such places; yet the frequent and necessary exercise of climbing mountains, which these people undergo, adds much to their health and longevity. Every one knows how much walking up a hill tends to create an appetite. This depends upon its increasing the insensible perspiration: an excretion, with which the appetite and the state of the stomach, in general, are much connected. Running is too violent, to be used often, or to be continued for any length of time. The running footmen, in all countries, are short-lived. Few of them escape consumptions, before they arrive at their thirty-fifth year. Sweating and perspiration have been found to be incompatible. The former always suppresses the latter. It has long been a subject of complaint, that the human species has been degenerating for these several

centuries. We grant, that rum, tobacco, tea, and some other luxuries of modern invention, have had a large share of weakening the stamina of our constitutions, and thus producing a more feeble race of men; yet, we must attribute much of our inferiority in strength, size, and agility, to the disuse which the invention of gun-powder and fire-arms has introduced of those athletic exercises, which were so much practised in former ages, as a part of military discipline. Too much cannot be said in praise of swimming. Besides exercising the limbs, it serves to wash away the dust which is apt to mix itself with the sweat of our bodies in warm weather. Bathing and swimming, frequently, in the summer season, are strongly recommended; but not too long a stay in the water at one time; lest, instead of increasing the vigour of the constitution, it be lessened. Talking and reading with an audible voice, promote the circulation of the blood through the lungs, and tend to strengthen these important organs, when used in moderation.

" These exercises should be varied according to age, sex, temperament, climate, and season. Young people stand in less need of exercise than old: women less than men. The natural vigour of their constitutions is such, that they suffer least from the want of it. This will explain the meaning, and shew the propriety of an opinion of Rousseau, who says, that, ' Women only should follow those mechanic arts which require a sedentary life.' But, again, a man who is phlegmatic, requires more frequent and violent exercise, than he who is of a bilious constitution: and, lastly, people, in warm climates and seasons, require less than those who live in cold. As Providence, by

supplying the inhabitants of warm climates with so many of the spontaneous fruits of the earth, seems to have intended, that they should labour less than the inhabitants of cold climates; so, we may infer from this, that less exercise, which is only a substitute for labour, is necessary for them. The heat of such climates is sufficient of itself to keep up a regular and due perspiration. It may be observed, that the longest-lived people are to be found in warm climates. The coldness of northern climates, from the vigour it gives to the constitution, prompts to all kinds of exercise, which are not always restrained within proper bounds. These, when used to excess, wear out the body. The inhabitants of warm climates being less prompted to these things, their bodies continue longer unimpaired. The exercises hitherto mentioned, may be termed active: the next are those of a passive nature. These are proper chiefly for valetudinarians. The life of a sailor is environed with so many dangers, that heaven has, in compensation for them, connected with it an exemption from many diseases. The exercise of sailing is constant. Every muscle is occasionally brought into exercise, from the efforts we make to keep ourselves from falling. These efforts continue to be exerted by the oldest sailors, although the consciousness of the mind in these, as well as in many other actions we perform, is not observed from the influence of habit. By means of this regular and gentle exercise, the blood is moved in those small capillary vessels, where it is most apt to stagnate, and perspiration is increased, which is carried off as fast as it is discharged from the body, by the constant change of atmosphere in a ship under sail. Nothing is here said of the benefit of

the sea-air, that being entirely negative. Its virtue, both at sea, and on the sea-shore, consists in nothing but its being freed from those noxious animal and vegetable effluvia, which abound in the air which comes across land. Sailing is recommended to consumptive people, especially to such as labour under a spitting of blood. Dr. Lind observes, that out of five thousand, seven hundred, and forty-one sailors who were admitted into the naval hospital at Haslar, near Portsmouth, in two years, only three hundred and sixty of them had consumptions, and in one fourth of these, it was brought on by bruises or falls. In the same number of hospital patients, in any other situation, six times that number would probably have been consumptive: so much does the gentle exercise of sailing fortify the lungs against all accidents, and determines the quantity and force of the fluids toward the surface of the body.

"Riding in a chariot has but few advantages, inasmuch as we are excluded from the benefit of fresh air; an article upon which the success of all kinds of exercise, in a great measure, depends. It should be used only by such persons as are unable to walk or ride on horseback. It is to be lamented, that those people use this mode of exercise the most, who stand in the greatest need of a more violent species.

"Riding on horseback is the most manly and useful species of exercise for gentlemen. Bishop Burnet expresses his surprise at the lawyers of his own time being so much more longlived (cœteris paribus) than other people, considering how much those of them who become eminent in their profession, are obliged to devote themselves to constant and intense study; and he attributes it entirely to

their riding the circuits so frequently, to attend the different courts in every part of the kingdom. Riding may be varied according to our strength, or the nature of our disorder, by walking, pacing, trotting, or cantering, our horse. All those diseases which are attended with weakness of the nerves, such as hysteric and hypochondriac disorders, which show themselves in a weakness of the stomach and bowels, indigestion, low spirits, &c. require this exercise. It should be used with caution in the consumption, and should never be violent, nor continued too long at a time. In riding to preserve health, 8 or 10 miles a day are sufficient to answer all the purposes we would wish for; but, in riding to restore health, these little excursions will avail nothing. The mind, as well as the body, must be roused from its languor. In taking an airing, as it is called, we ride over the same ground, for the most part, every day. We see no new objects to divert us; and the very consideration of riding for health sinks our spirits so much, that we receive more harm than good from it. Upon this account, long journeys are recommended to such people, in order, by the variety or novelty of the journey, to awaken or divert the mind. Many have, by these means, been surprised into health. Persons who labour under hysteric or epileptic disorders, should be sent to cold climates; those who labour under hypochondriac or consumptive complaints, should warm.

"With respect to the attention to exercise that should be recommended to those of studious habits, it is very generally observed, that how agreeable soever they may be to the mind, they are very far from being equally salutary to the body. Every one observes, that the Creator has formed an inti-

mate connexion between the body and the mind; a perpetual action and re-action; by which the body instantly feels the disorders of the mind, and the mind those of the body. The delicate springs of our frail machines lose their activity and become enervated, and the vessels choked with obstructions, when we totally desist from exercise, and the consequences necessarily affect the brain: a mere studious life is, therefore, equally prejudicial to the body and the mind. The limbs, under such circumstances, become stiff; an awkward manner is contracted; and a certain disgustful air attends every action. An inclination to study is highly commendable; but it ought not to be carried to the extent of aversion to society and motion. The natural lot of man is to live among his fellows; and whatever may be his situation in the world, there are a thousand occasions wherein he must render himself agreeable; to be active and adroit; to command the impetuous steed; to defend himself against an enemy; to preserve his life by dexterity, as by leaping, swimming, &c. Many rational causes have, therefore, given rise to the practice of particular exercises; and those legislators who deserve to be called the most sagacious and benevolent, have instituted opportunities for enabling youth who devote themselves to study, to become expert, also, in laudable exercises."

Kendal's Encyclop.

"Labour or exercise, as Dr. Cheyne observes, is indispensably necessary to preserve the body any time in due plight. Let any diet be pursued, however adjusted, both in quantity and quality; let whatever evacuations be used to lessen the malady; or any succedaneum be proposed to prevent the ill effects, still our bodies are so made, and the animal

economy is so contrived, that, without due labour and exercise, the juices will thicken, the joints will stiffen, the nerves will relax; and, from these disorders, chronical diseases, and a crazy old age, must ensue. *Essay on Health.*

"Of all the exercises that are, or may be, used for health, as walking, riding on horseback, or in a coach, digging, pumping, ringing, &c. walking is the most natural, and would be the most useful, if it did not spend too much of the spirits of the weakly. But riding is certainly the most manly, the most healthy, and is less laborious and expensive of spirits than any.

"It is generally said, that riding is a more healthful exercise than walking; which appears to be an assertion a little too general; for walking is much more effectual in promoting an increase of muscular strength, and in imparting to the fibres a due elasticity, than riding. But, where any of the viscera are much obstructed, and a patient is too weak to support sufficient walking exercise; in such case, riding may be more beneficial. Upon the whole, it may be said, that walking is best for the preservation of health, but riding for the relief of chronical distempers; for, in those which are acute, neither of them is advisable.

"Those organs of the body that are most used, always become strongest; so, that we may strengthen any weak organ by exercise. Thus, the legs, thighs, and feet of chairmen; the arms and hands of watermen; the backs and shoulders of porters, grow thick, strong, and brawny, by time and use. It is certain, also, that speaking strong and loud will strengthen the voice, and give force to the lungs. To the asthmatic, therefore, and to those of weak lungs, I would recommend, says Dr.

Cheyne, talking much and loud; walking up easy ascents, &c.; to those of weak nerves and digestion, riding on horseback; to those troubled with the stone, riding over rough causeways in a coach; to those troubled with rheumatic pains, playing at billiards, cricket, or tennis; to those of weak arms or hands, playing at tennis or football; to those of weak backs or breasts, ringing a bell, or working at the pump. Walking through rough roads, even to lassitude, will best recover the use of limbs to the gouty; though riding will best prevent the disease; but the studious, the contemplative, the valetudinary, and those of weak nerves, must make exercise a part of their religion. A condition necessary to render exercise as beneficial as may be, is, that it may be used on an empty stomach.

Under the head of exercise, cold bathing and the flesh brush come, also, to be recommended."

Hall's Encyclop.

CHAPTER VI.

CLOTHING.

EVERY person's own experience must have taught him, that his health, as well as comfort, depends greatly on clothing: indeed, it is to be doubted, whether the effects of variable weather and climates, which are so sudden, and so often productive of diseases on this continent, (a country that may not improperly be said to participate of all the climates in the world,) might not, in great measure, be prevented, by adapting our clothing, houses, &c. to the different vicissitudes of the weather and seasons of the year.

Each season ought to have its proper clothing; and it is always safest to exceed in thick or warm clothes, especially in changeable weather and climates.

Some tender persons, after being abroad and returning home, are apt to take cold on changing their clothes; which, in such cases, ought to be done in the morning in preference to any other time. Valetudinarians, and others of delicate constitu-

tions, ought, even in the hottest seasons and climates, when exposed to the evening air, to put on an additional garment, or one thicker than is necessary in the day-time.

One reason, why people who change climates, or remove from one country to another, become sickly, is, for want of adapting their dress accordingly: for instance, it would be very improper, as well as disagreeable, for a Canadian to wear his customary clothes in Carolina; and, no less so, for an inhabitant of the latter place, to continue his in the country of the former.

Labouring people, and all who perspire freely, ought not to continue at hard work with all their customary clothes on; but should, when they begin, take off a part, remembering carefully, however, when they cease, to put on the same, with, perhaps, an additional garment: a want of attention to which, has, undoubtedly, laid the foundation of many painful and fatal diseases. Flannel is peculiarly adapted for this class of people; and, indeed, for almost every other.

Flannel is cheaper, and more comfortable; and generally far more healthy than linen, especially in cold seasons and variable climates; in which times and places, it should, by all means, be worn next to the skin.

A flannel shirt is both an excellent preventive and remedy in rheumatic and asthmatic disorders; and in all others, occasioned or supported by an obstructed perspiration; and it has not improperly been termed one of the greatest preservatives of health.

Flannel drawers, as well as flannel shirts, are so conducive to health and comfort, in cold weather, and in variable climates and seasons, that I can no

less recommend the former than the latter, to the female, as well as to the male sex, especially, as they arrive at the age of puberty.

Old people, so far advanced in life as to take little or no exercise, and whose circulation has become languid, stand more particularly in need of warm clothing, which ought to consist of flannel, above all other kinds, worn next to the skin.

Many lose the advantage of wearing flannel, by neglecting to put it on early enough in the autumn, and by taking it off too soon in the spring. My general directions are, to put it on about the time of the autumnal equinox, or with the first frosts; and to continue it as long as any appear in the spring, or rather longer: indeed, for want of attending to this, some not only lose the advantage of it, but suffer material injury, especially if they discontinue it too early; by which imprudence, I have known some affected with severe pains and rheumatic complaints.

Flannel is not only warmer and more comfortable than linen, in cold weather, but it enables a person to withstand taking cold under almost every situation or circumstance favourable to it, such as moisture, sweating, exercise, &c.

Woollen stockings are, undoubtedly, the most healthy two-thirds of the year; and are highly necessary and proper for children and sucking infants, that are often troubled with gripes, colics, &c. owing to the naked and cold state in which their feet and legs are kept.

Many think they cannot wear flannel by reason of its fretting their skins; but there are very few who cannot bear the softer kind, by inuring themselves properly to it: and some of very tender

skins and delicate constitutions, wear it throughout the summer, and find it very tolerable.

Some, on the approach of warm weather, feeling the irritating effects of flannel shirts or waistcoats, are apt to take them off; but it is better to bear that inconvenience, and gradually to diminish the outside clothing; and the uneasiness will soon become less.

Those who cannot, or do not choose to wear it next to the skin, will find an advantage in a flannel or leathern waistcoat worn betwixt the jacket and shirt; but, when that can be borne, it is always preferable.

It is said, that the manufacturers in various kinds of hot business, as glass-houses, founderies, and forges, constantly wear flannel throughout the whole year, finding it both more comfortable and healthy, than linen.

Cotton is of an intermediate nature between wool and linen; and, although not so warm and healthy as the former, may be more so than the latter, especially in cold countries and changeable climates.

The practice of putting on warm or winter clothes early in autumn, is both comfortable and healthsome.

It is well to go thinly clad in the house; but, in cold weather, when without doors, and especially if the body be not under exercise, to put on additional clothing.

The Chinese are said to be particularly careful to change and adapt their clothing to the variations of the weather: a practice highly laudable, and worthy of imitation by other nations.

It was thought, that Robert Boyle preserved his life many years, by regulating the thickness of his

clothes, by the degree of cold pointed out by the thermometer.

The unnatural and unnecessary practice of stiff stays and tight lacing, is, it is hoped, fast declining and falling into disuse: as is, also, that of the tight swaddling of infants, whose dress, above all others, ought to be loose and easy: they having, no doubt, an effect in impeding respiration, and in impairing digestion, as well as in contracting and cramping the natural easy motion of the muscles and limbs.

Wet clothes should always be removed, as soon as possible, from all parts of the body; which should, immediately afterwards, be well rubbed with flannel and dried. And damp shirts, sheets, and beds, should, also, be carefully avoided.

The superior advantages of flannel are experienced, not only in drawers and shirts, but, also, in sheets; which last are more comfortable made of wool, than of linen, especially in cold, moist seasons, and in damp places.

Strait and narrow-toed shoes are still in fashion with some; but they need only the united voice of nature, reason, and experience to discard them from use. Cold feet, corns, and warts are their painful consequences; and those who can bear these disagreeable evils, may persist in their use. Shoes worn too small and narrow in childhood, are a frequent cause of cold and uncomfortable feet in more advanced age.

Every person's health depends much on keeping his feet warm and dry; to which, thick and cork soles will greatly contribute. New shoes, and those lately mended, should not be worn, before they are thoroughly dry.

New houses with walls lately plastered, are both

very uncomfortable and unhealthy; and should, also, be shunned, particularly to sleep in.

Tight collars, waistbands, wristbands, and garters, by obstructing the circulation of the blood, are all improper; and may, if constantly worn, prove injurious to health. The first have been known to produce vertigoes and apoplexies.

Light-coloured clothes, and white hats, are found to attract the rays of the sun less, than those that are dark; and are, therefore, better adapted for hot seasons and climates.

" Whoever is subject to catch cold, or have winter coughs, or asthmas, sore-throats, rheumatisms, &c. will find their interest in seeking the flannel waistcoat worn next to the skin, and put on before the cold weather sets in, and, also, in warm stockings and shoes; for the consent between the feet and the lungs, throat and bowels, is very great, and many a fit of the colic, &c. may be prevented by attending to this little matter.

" I have, for some years past, been very tender, and much of a valetudinarian, particularly before I put on a flannel waistcoat next my skin. I think I owe my continuance of health to it; and am more robust, and less liable to catch cold during our severest winters since I used it. I know, that flannel, like all other things, cannot be applied to every person with equal propriety. But, for those afflicted with winter coughs, or in gouty, rheumatic, and asthmatic constitutions, it is not only useful but absolutely necessary.

" Those who object to flannel, may wear calico instead of it: those who object to both of them, may wear a thin leathern waistcoat over the shirt, as is the custom in Spain.

" Children that are subject to gripes, convul-

sions, coughs, &c. should always wear warm stockings: these, and many of their complaints, arise from their limbs being chilled, by the severe cold of our winters, and their legs and feet not being covered at all." *Hays.*

"Those officers and soldiers who wore flannel waistcoats, next their skins, not only escaped colds, but dysenteries, and other contagious disorders; while those that wore none, were soon hurried off, by diseases so commonly fatal in camps." *Rush.*

"Sir Benj. Thomson observes, He is confident it would prevent a number of diseases; and he thinks there is no greater luxury than the comfortable sensation which arises from wearing it, especially after one is a little accustomed to it.

"It is a mistaken notion, (says he), that it is too warm a clothing for summer. I have worn it in the hottest climates, and at all seasons of the year, and never found the least inconvenience from it. It is the warm bath of a perspiration confined by linen shirts wet with sweat, which renders the summer heats of southern climates so insupportable; but flannel promotes perspiration, and favours its evaporation; and evaporation, as is well known, produces positive cold." *Encyclop. Britann.*

"Not only analogy, but experience, also, proves, that wool, worn next the skin, has indisputable advantages over all other substances.

"The principal good effect of flannel, however, consists in its gentle and beneficial stimulus, or that friction which it occasions on the skin, and by which it opens the pores. We must not imagine, that flannel, of itself, heats more than linen, or cotton, for it is not the heat which occasions inconvenience, but the circumstance of the perspirable matter adhering to the skin. In flannel, we may

perspire without danger, and undertake any exercise of the body without disagreeable sensations; but not so, when linen remains wet on the skin. If we take violent exercise in flannel, perspiration is necessarily increased, but the perspired matter is communicated through the flannel to the atmosphere, and the skin remains dry, warm, and comfortable. If we take the same exercise in linen shirts, perspiration is, indeed, also increased but the perspired matter is not imparted to the atmosphere, but is inspissated in a fluid state, clogs the linen, and remains in contact with the skin.

"Another advantage which flannel possesses over linen and cotton is, that people perspiring profusely in flannel shirts, may safely venture in the open air, and will not easily catch cold, because flannel does not retain the perspired humours. If we do the same in linen shirts, the skin will soon be wetted by perspiration, which will occasion a sensation of chilliness and shivering; in most cases, a violent cold; and, very frequently, an inflammation of the lungs, will be the consequence. This danger arises from the fluid matter settling on the skin; and we may be still more severely injured, if we, at the same time, expose ourselves to the action of the wind, or a current of air.

"It has been objected, that flannel, worn next the skin, is debilitating, because it too much increases perspiration; but this is not founded on truth; since perspiration, as long as the skin remains dry, never can be hurtful or immoderate.

"The uneasy sensation occasioned by flannel is of very short duration. That it may make the skin red and inflamed, if it be too much rubbed and scratched, cannot be denied; but it is a palpable error, that it produces cutaneous eruptions.

It has quite a contrary effect, as it preserves the pores open, increases perspiration, and thus removes the cause of cutaneous diseases, which arise chiefly from a checked and irregular state of excretion by the pores.

"Many desperate diseases in the legs of the common people, many inflammations of the throat, breast, and lungs, might be prevented, and numbers of lives saved, both of children and adults, if flannel were more generally worn.

"Those who complain of cold legs and feet, are never comfortable nor healthy; but, if they could be prevailed upon to wear worsted stockings and flannel drawers, they would acquire a quicker circulation of the blood in the lower extremities, and prevent many troubles and indispositions, from which, without this precaution, they cannot escape.

"By continuing it a sufficient length of time, and changing it frequently, the most obstinate, gouty, and rheumatic complaints have often been removed, and many other imminent dangers avoided.

"All coverings of the neck ought, therefore, to be worn loose. Persons who are liable to sore throats, and diseases of the breast, should gradually accustom themselves, in mild and dry weather, to go with their necks as slightly covered as possible; and, if fashion would permit it, to have no other covering but the collar of the shirt. In cold and moist weather, a thin handkerchief may be added. But the modern cravats, filled with a stiffening of cotton or wool, are extremely injurious to the part which they are intended to protect. For, by occasioning too great heat, they render the neck unnaturally sensible to every change of

the atmosphere. It is rather surprising, that, from a due sense of their perniciousness, we have rejected all coverings of the neck in children, as being troublesome and useless; yet, in defiance of reason and experience, we continue to encumber our own necks with such bandages.

"Laced stays are, among the better ranks of society, at present out of fashion; since the Grecian form is justly preferred to all artificial shapes. Yet, when we have adopted an useful habit ourselves, it is our duty to recommend it to those, also, who are still following a destructive practice. I cannot but reluctantly observe, that nine-tenths of the community still wear these oppressive strait jackets, merely because their mothers and grandmothers have done the same. I shall, therefore, briefly state a few of the consequences arising from this unnatural part of female dress; namely, diseases of the breast, external callosities, and cancer itself; the ribs are compressed; the spine is bent out of its place; the free expansion of the lungs is prevented: hence, shortness of breath, indurations and tubercles of the lungs, cramp of the stomach, defective digestion, nausea, irregularities in the secretory and other organs, and the like: in short, the list of maladies thus produced, is too long to be here detailed; and both married and unmarried ladies, for the sake of compassion, should exert all their influence to convince the common people of the injuries occasioned by stiff-laced stays.

"If any such part of dress be at all admissible, it ought to consist of soft and pliable materials, such as fine chamois leather, hatters' felt, or, what is still better, the knitted and more elastic texture used for gloves and stockings.

"There are many reasons which delicacy for-

bids me to mention, why it would be highly beneficial to the physical and moral condition of females, to wear some kind of drawers, at least, after a certain age.

"We may farther remark, that the prevailing custom of wearing light and thin dresses, especially among females, is by no means conducive to longevity; for, as those votaries of fashion and caprice are, in all seasons, exposed to cold and rheumatic complaints, many of them at length contract pulmonary or consumptive diseases, and fall victims of folly, at a period of life when they ought to be most useful to society.

"In autumn, we should not dress too lightly; and in the mornings and evenings, always somewhat warmer; in short, we ought to avoid every thing that appears likely to check and repel perspiration. The baneful custom of accommodating our dress to the almanac and the fashion, rather than to the vicissitudes of the weather, in this inconstant climate, must necessarily be productive of many disagreeable consequences. Above all things, we ought to change our summer-dress rather early in autumn, and to clothe ourselves gradually warmer, according to the variations of the weather."

Willich.

"But the dangerous consequence of external pressure on the abdominal viscera, may be more fully demonstrated by observing the effect of tight lacing in the female sex; a custom so prevailing, though unnatural and pernicious, that it requires the most serious consideration.

"By the violent mechanical pressure of narrow stays, or tight lacing, the internal vital organs will be partially displaced, and the body thrown out of its natural direction; consequently, distortion will

ensue, particularly in young subjects who are in a growing state. Under such circumstances, the whole abdominal viscera being compressed, especially the stomach, liver, and mesentery; the circulation of blood through their numerous vessels being thereby obstructed; the due performance of their vital functions will be prevented; without which, neither health nor life can long subsist.

"The violence of such pressure will, also, change the course of the blood; and, by strangulating the exterior vessels, those internally will be overcharged with a redundant quantity: hence, the more delicate parts, viz. the brain and lungs, being distended and inflamed, the patient will be affected with stupor, and head-ach, difficulty of breathing, and a strong, feverish breath.

The constriction of tight ligatures round the waist, will also prevent the heart, which is the principal agent of circulation, from discharging its blood by the arteries, for the nourishment of the body; or its being freely returned by the veins; and, from this cause, will proceed oppression and palpitation of the heart, fainting, swelling of the legs, fluor albus, and profuse periodical discharge; obstruction of the lymphatic vessels, and mesenteric glands; inflammation of the lungs, and spitting of blood, frequently terminated by an incurable consumption.

"In a word, this preposterous and pernicious custom, which prevails more or less, as fashion points the way, disfigures the body, destroys the natural ease and elegance of the shape, and has been the cause of bringing many of the female sex to an untimely grave." *Leake.*

CHAPTER VII.

PASSIONS OF THE MIND.

NOTHING contributes more, perhaps, to preserve a constitution healthy, and to restore it when disordered, than a calm dispassionate state of mind; there having cases occurred, not only of bodily disease, but death itself, being occasioned by violent fits of anger. Witness the instances of the princes, Wenceslas, Valentinian, and Corvinces, to all of whom it proved mortal.

The passions of the mind may be divided into two classes: 1st, joy, hope, love, and desire; which are called animating: 2d, anger, terror, revenge, hatred, and envy; which are called the depressing passions. They are not only different in their nature or degree, but in their effect on the constitution; and, therefore, they might be supposed to require separate considerations; but this would lead me into a discussion and length beyond the bounds of the present work.

Though anger is too often indulged, and too rarely considered as an exciting cause of diseases,

yet its effects are too obvious and baneful to escape notice; for experience shows, that, by its indulgence, the whole vascular, nervous, and muscular systems are violently agitated, and thrown into preternatural motions, constrictions, and spasms; which operate, and often produce morbid effects on the nervous and membranous parts, such as the stomach, intestines, and biliary passages: hence, the diseases most commonly the consequence of violent passions, are hæmorrhages, jaundice, colic, epilepsy, and apoplexy, with the whole train of nervous and hypochondriac complaints, too numerous to recapitulate here.

As anger has such a powerful effect on the constitution as to occasion disease and death, it is not surprising to find, that it might, sometimes, answer the purpose of medicine, and be used as a remedy. We are accordingly told, that it has cured obstinate agues, and that it has proved no less equally salutary to certain arthritic, paralytic, and even dumb persons. But this remedy being attended with such different and powerful effects, requires the utmost care and prudence in its application: indeed, so much so, that it deserves more properly to be ranked among the lædentia, (hurtful,) than juvantia, (useful,) of medicines.

Persons subject to violent fits of anger or passion, should, both with a physical and moral view, endeavour to guard against it with particular care and attention. They ought to watch with scrupulous vigilance the first approach of the enemy, and to exert themselves to withstand, with rational and firm fortitude, the force of the impending tempest, by diverting their attention, as much as possible, from the objects of provocation. They should, by all means, endeavour to avoid the causes that give

rise to the storm, and to shun, with terror, the black cloud that threatens the blast, as they would the mortal Upas, or the venomous Manchineel tree of the Indies.

Such ought to bear in mind, that "The dominion over our passions and affections is an essential and indispensable requisite to health." And they will find a particular advantage in observing temperance in eating and drinking; in avoiding much animal food; and other kinds of meats, as well as drinks, of a stimulating, acrid, and heating nature; and, in applying to some steady employment of mind and body, which may, sometimes, be usefully extended to a moderate degree of fatigue.

Pythagoras advised his pupils to abstain from animal food, a plentiful use of which is observed to lead to an irascible and libidinous disposition.

After paroxysms of passion, when no morbid effects appear, few or no medicines become necessary; but it is well to observe temperance in diet, and to encourage sleep; to which, it is found, that the constitution, after the impulse of the fit, is generally inclined.

It is judged safest and most prudent for persons under the influence of passion, not to swallow their saliva or spittle, it being thought by some, to be, at such a time, of a venomous nature: indeed, instances are recorded of persons being bitten by others in anger, who have died in consequence.

Lest my readers should think, that I have unnecessarily warned them of the dangerous nature and effects of the passions, I shall adduce some additional and confirming authorities, as I have heretofore done, on most of the other subjects in this treatise.

"Physicians and naturalists, afford instances of very extraordinary effects of this passion. Borrichius cured a woman of a very inveterate tertian ague, which had baffled the art of physic, by putting the patient in a furious fit of anger. Valeriola made use of the same means, with the like success, in a quartan ague. The same passion has been equally salutary to paralytic, gouty, and even dumb persons; to which last, it has sometimes given the use of speech. Etmuller gives divers instances of very singular cures wrought by anger; among others, he mentions a person laid up in the gout, who, being provoked by his physician, flew upon him and was cured. It is true, the remedy is somewhat dangerous in the application, when a patient does not know how to use it with moderation. We meet with several instances of princes to whom it has proved mortal; *e. g.* Valentinian, the first, Wenceslas, Matthias Corvinces, king of Hungary, and others. There are, also, instances wherein it has produced the epilepsy, jaundice, cholera morbus, diarrhœa, &c. In fact, this passion is of such a nature, that it quickly throws the whole nervous system into preternatural commotions, by a violent stricture of the nervous and muscular parts; and surprisingly augments, not only the systole of the heart, and of its contiguous vessels, but, also, the tone of the fibrous parts in the whole body. It is, also, certain, that this passion, by the spasmodic stricture it produces in the parts, exerts its powers principally on the stomach and intestines, which are highly nervous and membranous parts; whence, the symptoms are more dangerous, in proportion to the greater consent of the stomach and intestines, with the other nervous parts, and, almost, with the whole body.

"The unhappy influence of anger, likewise, on the biliary and hepatic ducts, is very surprising; since, by an intense constriction of these, the liver is not only rendered scirrhous, but stones, also, are often generated in the gall-bladder and biliary ducts: these accidents have scarcely any other origin than an obstruction of the free motion and efflux of the bile, by means of this violent stricture. From such a stricture of these ducts, likewise, proceeds the jaundice, which, in process of time, lays a foundation for calculous concretions in the gall-bladder. Lastly, by increasing the motion of the fluid, or the spasms of the fibrous parts, by means of anger, a larger quantity of blood is propelled with an impetus to certain parts; whence, it happens, that they are too much distended, and the orifices of the veins distributed there opened. It is evident, from experience, that anger has a great tendency to excite enormous hæmorrhages, either from the nose, the aperture of the pulmonary artery, the veins of the anus; or, in women, from the uterus; especially in those previously accustomed and disposed to such evacuations.

"The due regulation of the passions, perhaps, contributes more to health and longevity, than that of any other of the nonnaturals. The animating passions, such as joy, hope, love, &c. when kept within proper bounds, gently excite the nervous influence, promote an equable circulation, and are highly conducive to health; while the depressing affections, such as fear, grief, and despair, produce the contrary effect, and lay the foundation of the most formidable diseases."

Encyclop. Britann.

"All passions, of whatever kind, if they rise

to a high and violent degree, are of a dangerous tendency: bodily disease, nay, death itself, may be their concomitant effects. Fatal apoplexies have frequently followed sudden dread or terror. Catalepsy and epileptic fits, sometimes accompany immoderate affliction, or distressing anxiety. Hypochondriasis, hysterics, and habitual dejection, may, indeed, arise from a variety of physical causes; but they are as frequently generated by the passions or sufferings of the mind alone, in individuals otherwise healthy.

"Diseases of the mind, after some time, produce various disorders of the body; as diseases of the body occasionally terminate in imbecility. In either case, the malady must be opposed by physical, as well as moral remedies.

"In order to prevent, or, at least, to oppose the torrent of these and similar passions, man must not only be seriously apprised and convinced of the danger and the dreadful misery attendant on intemperance and excess, but he must, also, submit to a strictly temperate mode of life, if he aspire to rise to the dignity of his nature, and above the rank of the lower animals. He is a rational being, though his sensitive faculties every where remind him of his animal nature. Hence, the following rules cannot be too rigidly adhered to: a constant and useful employment; salutary exercise of the body, till it be moderately fatigued; temperance in eating and drinking; abstinence from strong and heating food and liquors; avoiding the habits of effeminacy, solitude, and too much rest; and, lastly, a strict attention, from early youth, to the most rigid modesty and purity of manners.

"No fluid is more affected by anger than the

bile, which, by its violent influx into the duodenum, produces a fixed spasmodic pain in the region of the navel, flatulency, vomiting, a bitter taste in the mouth, uneasiness and pressure about the pit of the stomach; and, at length, either obstructions or diarrhœa.

"The propensity to anger is increased by want of sleep; by heating food and drink; bitter substances; much animal food; rich soups; spices; and, by all things that have a tendency to inflame the blood. Persons subject to this passion, should use diluent, acidulated, and gently aperient drink, and observe, in every respect, the most rigid temperance. Such persons ought to sleep more than others; and employ the lukewarm bath, gentle cathartics of cream of tartar or tamarinds, fruit, buttermilk, whey, vegetable aliment, &c.

"After a very violent paroxysm of anger, it is sometimes necessary to open a vein, in order to prevent inflammation; or, to cause the evacuation of the bile by an emetic; which cases, however, are to be determined only by professional men. The saliva should not be swallowed, in such a situation; for, it is, by some, supposed to possess a slightly poisonous quality.

"Persons under the influence of terror, sometimes, stand in need of a cordial; but the hypochondriac will find in wine and other strong liquors, rather an uncertain remedy, or one which, at best, is only palliative; and, if immoderately used, they must necessarily promote sadness, as well as every other passion, which these supposed anodynes, in the end, always increase by their alternately stimulating and relaxing effects." *Willich.*

CHAPTER VIII.

RETENTIONS AND EXCRETIONS.

THE observation and experience of all sufficiently evince, that our health is often affected by the state and functions of the retentions and excretions.

It is necessary, not only that a due proportion of food and drink be taken into the body for its nourishment and support; but, that all excrementitious substances and fluids remaining, or separated from them, and not intended for its use, should be timely and properly discharged by the several emunctories or outlets: a want of which, often lays the foundation of many painful and incurable disorders.

"Where the animal functions are duly performed, the secretions go on regularly; and the different evacuations so exactly correspond to the quantity of aliment taken in, in a given time, that the body is found to return daily to nearly the same weight. If any particular evacuation happen to be preternaturally diminished, some other evacua-

tion is proportionally augmented, and the equilibrium is commonly preserved; but continued irregularities, in these important functions, cannot but terminate in disease." *Encyclop. Britann.*

"The evacuations of the body from its superfluous, impure, and noxious particles, are no less necessary than its nourishment. The same power which changes and assimilates our food and drink, likewise effects the due and timely evacuation of the secretions. It is an object of the first consequence, that nothing remain in the body which ought to be evacuated; and, that nothing be ejected which may be of use to its preservation. Indeed, much depends on a proper state of the evacuations. If these be disordered, the most rigorous observance of dietetic rules is insufficient to ensure our health; while, on the contrary, most of those rules may be neglected for some time, without any injurious consequences, if the evacuations be regular." *Willich.*

The principal emunctories by which the evacuations are excreted, are, by stool, urine, and perspiration; of each of which, I shall treat in that order.

Section 1. *By Stool.*

Although some persons may go several days without a stool, yet no one can be said to enjoy good health long, or his constitution to be without danger of being disordered, who has not an evacuation of this kind daily, or, at farthest, every other day: for, if costiveness, once induced, become fixed, and the fæces or excrements be voided in a dry, indurated state, and with difficulty, it is almost sure to be followed by some of its numerous

bad consequences, among which, are flatulency, head-ach, dyspepsia or indigestion, pyrexia or febrile symptoms, colic, and hæmorrhoids or piles.

The importance and necessity of a daily regular passage by stool, are not enough known, and rarely sufficiently attended to, either by physicians or others, who may otherwise enjoy pretty good health; for, if a dry, costive state of the bowels continue long, and become habitual, it is rendered difficult of cure, though, at first, it might have been easily obviated.

It is well known, that a common costiveness may be removed, for the present, by taking some purgative medicine; but, in that which is obstinate or habitual, it becomes necessary to repeat it frequently; which practice, if long continued, is almost sure to injure the constitution, especially, if those of a stimulating, acrid, or heating nature be used.

It ought to be an established point with all who wish to preserve their health, (and who does not possess that wish?) to endeavour to have a free regular stool, at least, once a-day: and, if they feel little or no inclination towards it, they should make the customary retreat, and use the necessary endeavours, at about a certain time of the day, which is generally best in the morning: and they will soon find, that a regular discharge that way will become, in some measure, habitual, and generally established: which is the easiest, safest, and best way to prevent a costive habit. Locke recommends, "To solicit nature by going regularly to stool every morning, whether one has a call or not."

Children should have two or three stools in a

day; and it is better for adults to have that number, than to pass over twenty-four hours without any.

The first motion to the discharge is the easiest, and ought always to be obeyed and preferred. It may, however, sometimes, not be improper to forego or pass over the first slight inclination, in order to establish the regular habit recommended.

Costive persons should retire often, even if they feel little or no occasion for it. Overstraining to promote the discharge ought, however, to be avoided, as it may produce ruptures, or the piles. The complaint seems, in some families, like certain other disorders, to be hereditary.

People of studious lives, and those who follow sedentary and inactive employments, are most subject to a slow and bound belly: such should, therefore, rise early in the morning, and be more particularly careful to use frequent exercise in walking, especially a little before the customary time of the evacuation; which will be found to be encouraged and promoted by that means: in confirmation of which, we may observe, that, by late indulgence in bed, or, by placing ourselves in an inactive situation; and, particularly, by riding on horseback, the discharge may altogether be prevented for a considerable time.

The inhabitants of cities are generally much more subject to costiveness, than country people, owing to the air, diet, and want of exercise, of which the former generally partake.

Some persons are made costive by being much in company; and others by being aboard of a vessel: both of which situations ought, therefore, to claim early and particular attention by all who are subject to this complaint.

When persons become costive, and pass the accustomed period several days, the power of evacuation becomes sometimes lost; and it not unfrequently throws them into colics; when it will become necessary to use clysters, or some purgative medicines immediately.

If the establishment of a regular habit by stool, be not found sufficient to obviate costiveness, we must endeavour to prevent it by a suitable diet; which will be frequently effectual, when that fails.

This should consist of a large proportion of fruit and vegetables, most of which are better in a cooked, than in a raw state, being less flatulent, and apt to inflate the stomach and bowels of hysteric, hypochondriac, and dyspeptic people. A plentiful use of apples, pears, prunes, cassia, figs, and tamarinds, is particularly well adapted for costive habits; and will frequently be found, without any thing else, to have the desired effect.

Bread made of flour from which little or none of the bran has been separated, is somewhat of a laxative nature, and has that effect upon some: and rye-bread is generally more so than wheaten.

I have already mentioned in Chapter III. the use of meslin, a kind of bread made of a mixture of wheat and rye, as surpassing all others for keeping the body soluble. Fat broths, with pot-herbs, marrow, and jellies made of calves' feet, are very suitable for persons subject to a dry, costive state of their bowels, and for those who pass their fœces in a compact, globular form.

A raw or rare-boiled egg, or a spoonful or two of treacle or molasses, taken in the morning fasting, has, sometimes, a good effect: and some think, that a draught of buttermilk, bonny-clabber, whey, or even fresh cold water, drunk evening and morn-

ing, has an opening tendency; but all spirituous, vinous, and heating malt-liquors should be carefully avoided by persons afflicted with costiveness.

When, neither the regular habit of going to stool, nor the diet which I have recommended, has the effect of keeping the body sufficiently open, we must have recourse to some laxative medicines; which should always, at first, be of the weakest and mildest kind; such as manna, senna, rhubarb, crystals or cream of tartar, soluble or vitriolated tartar, flowers of sulphur, castor oil, or a little of the lenitive electuary. Balsam of capivi, taken in doses of sixty drops, or upwards, operates as a laxative; and is excellent in the hemorrhoids or piles. Hiera picra, aloetic pills, and elixir proprietatis, or rather, the elixir sacrum of the Edinburgh Dispensatory, answer well for persons of sedentary lives, cold stomachs, and slow bowels; but are improper in that disorder, and in habits disposed to it.

Those who have an aversion to the above medicines, or who find themselves injured by a frequent use of them, may substitute mustard-seed, castile soap, rob of elder berries, or syrup of buckthorn; or, they may occasionally swallow a little of the smoke, or spittle of tobacco, which has been found particularly serviceable in relieving some kinds of costiveness, accompanied with frequent colic pains.

In some cases of the most inveterate and habitual costiveness, in which the usual remedies prove ineffectual, it is said, that carbon, or charcoal, has been administered with the most complete success. The finely levigated powder is mixed in the proportion of one drachm to one ounce of lenitive electuary, and two drachms of soda: which mixture

may be taken to the quantity of half an ounce, or more, twice or thrice a-day, as occasion may require.

I need scarcely remark, that all laxatives ought to be taken on an empty stomach; and, that no solid food should be eaten soon afterwards; for, by inattention to this circumstance, they are not only less effectual, but tend to injure the constitution much more, than when taken fasting.

The most proper nourishment to be first swallowed, after taking medicines of this class, is, a little warm tea, coffee, or weak chocolate; and next, either some barley water, oaten or indian gruel, chicken water, weak milk-porridge, or thin broth; according to the inclination or constitution of the patient, and experience of the physician. It is, moreover, highly improper and imprudent for a person, during the operation of any strong purgative, particularly of the mercurial kind, to drink cold water, or much of other liquids in that state; and to expose himself to a damp cold air; but he should rather keep house, and take all his drink and food warm. The contrary management has often produced sudden and alarming effects, too well known to every physician.

Some cases of costiveness, however, occur, in which purgative medicines seem not well to answer the end; at least, without being copiously used, and frequently repeated; and in which, clysters only are found to give relief. These are both more easily, and more effectually administered, when given with a large syringe, than with the common bag and pipe.

A form of syringe is now invented, with which a person is enabled to administer an injection on himself, without any assistance. This will, it is

hoped, be a means of bringing into more frequent practice the use of a remedy, which has hitherto been too much neglected in this country; and which has too often been attempted to be supplied with internal medicines that have, by frequent repetition, proved highly prejudicial to many constitutions.*

The hemorrhoids are generally preceded and occasioned by a slow and bound belly; which is not only the certain forerunner of that painful and distressing complaint, but of many others, especially in people of studious lives and sedentary employments.

Before dismissing the subject of costiveness, it is proper to remark, that, like many other disorders, it is occasioned by various remote causes, and, therefore, requires different means to obviate or cure it.

It is frequently owing to a relaxed and debilitated state of the alimentary canal: in which case, the cold bath, injections of cold water, port wine, and bitters, especially the quassia and colombo root, with the bark, prove a cure. It is, sometimes, occasioned by the drink or food, and by other exciting causes, which should always be searched out, and, if possible, removed.

Persons who become costive under a free per-

* A common clyster may be made of half a pint of new milk or linseed tea, with a spoonful of oil, fat, or butter, and as much common salt: to which the same quantity of starch, molasses, or brown sugar may be occasionally added.

Various additions may be usefully made to injections in different diseases: to point out which is not within my present plan.

The use of clysters is not confined merely to evacuating the rectum, but injections of broth, and other nutritious liquids, may be successfully administered to support life for a considerable time, when little or no aliment can be taken by the mouth.

For this last purpose, a syringe is greatly preferable.

spiration, either by wearing flannel, hard labour, or other means, will find an advantage in the frequent use of the cold bath.

One or two causes of costiveness remain yet to be mentioned.

Persons who are in the frequent practice of taking opium, and other astringent medicines, are generally constipated. The prevention here, as in most other cases, consists in avoiding the cause; or, when their use is indispensable, in intermixing those of an opposite quality.

Another cause is, the pressure of the uterus in pregnant women, who, above all others, ought to be attentive to preserve an open state of their bowels by a cooling, laxative diet; and to avoid purgatives of an acrid, irritating, and drastic nature: which care is more particularly necessary for such as are subject to an hemorrhoidal affection.

I know a person, on whom the sight of water, when going to bathe, almost always has the effect of producing a stool. Is not this, as well as its diuretic operation, a general consequence on most people?

"The motion of the intestines may be either too great, or too little; and hence proceeds either costiveness or looseness. The former is frequently not to be accounted morbid; but, when it is, it may arise from the structure of the intestines being injured, or, from their being shut up, or obstructed by spasm, or otherwise; or, from a deficiency of those humours which moisten the intestines; or, it may arise from mere debility, from a palsy of the fibres, perhaps; or, from a deficiency of the usual stimulus of the bile, for instance; or, from too dry or slender a diet.

"The consequences of long-continued costive-

ness are, first, an affection of the alimentary canal; and, then, of the whole body. The stomach is diseased, and does not digest the aliments properly; the whole body is left destitute of its usual stimulus; the blood is corrupted, perhaps, from the resorption of the putrid matter into it. The circulation through the abdominal viscera is impeded; hence, frequent and irregular congestions, varices of the veins, hemorrhoids, &c. Nay, the intestines themselves being overloaded, distended, and irritated by an heavy, acrid, and putrid load of aliment or other matters, are excited to new and unusual contractions; which, if they do not get the better of the obstruction, bring on tormina, colic, or an iliac passion, inflammation, and gangrene, fatal in a very short time.

"Costiveness is, sometimes, occasioned by debility in dyspeptic persons; sometimes, it is the effect of rigidity; and, sometimes, it is symptomatic of the colic. It may proceed from an excessive heat of the liver; drinking rough red wines, or other astringent liquors; too much exercise, especially on horseback. It may, likewise, proceed from a long use of cold insipid food, which does not sufficiently stimulate the intestines. Sometimes, it is owing to the bile not descending to the intestines, as in the jaundice; and, at other times, it proceeds from diseases of the intestines themselves, as a palsy, spasms, tumors, a cold dry state of the intestines, &c.

"Excessive costiveness is apt to occasion pains of the head, vomiting, colics, and other complaints of the bowels. It is particularly hurtful to hypochondriac and hysteric persons, as it generates wind and other distressing symptoms.

"Persons who are generally costive, should live

upon a moistening and laxative diet; as roasted or boiled apples, pears, stewed prunes, raisins, gruels with currants, butter, honey, sugar, and such like. Broths, with spinage, leeks, and other soft pot-herbs, are, likewise, proper. Rye-bread, or that which is made of a mixture of wheat and rye together, ought to be eat. No person troubled with costiveness should eat white bread alone, especially, that which is made of fine flour. The best bread for keeping the belly soluble, is what, in some parts of England, they call meslin. It is made of a mixture of wheat and rye, and is very agreeable to those who are accustomed to it.

"Costiveness is increased by keeping the body too warm, and by every thing that promotes the perspiration; as wearing flannel, lying too long a-bed, &c. Intense thought, and a sedentary life, are, likewise, hurtful. All the secretions and excretions are promoted by moderate exercise without doors, and by a gay, cheerful, sprightly temper of mind.

"The drink should be of an opening quality. All ardent spirits, austere and astringent wines, as port, claret, &c. ought to be avoided. Malt-liquor that is fine and of a moderate strength, is very proper. Buttermilk, whey, and other watery liquors are, likewise, proper, and may be drunk in turns, as the patient's inclination directs.

"Those who are troubled with costiveness ought, if possible, to remedy it by diet, as the constant use of medicines for that purpose is attended with many inconveniences; and, often, with bad consequences. In time, the custom becomes necessary, and generally ends in a total relaxation of the bowels, indigestion, loss of appetite, wasting of the strength, and death.

"The learned Dr. Arbuthnot advises those who are troubled with costiveness to use animal oils, as fresh butter, cream, marrow, fat broths, &c. He, likewise, recommends, the expressed oils of mild vegetables, as olives, almonds, pistaches, and the fruits themselves; all oily and mild fruits, as figs; decoctions of mealy vegetables: these lubricate the intestines; some saponaceous substances which stimulate gently, as honey, hydromel, or boiled honey and water, unrefined sugar, &c.

"The Doctor observes, that such lenitive substances are proper for persons of dry atrabilarian constitutions, who are subject to astriction of the belly and the piles, and will operate when stronger medicinal substances are sometimes ineffectual; but, that such lenitive diet hurts those whose bowels are weak and lax. He, likewise, observes, that all watery substances are lenitive; and, that even common water, whey, sour milk, and buttermilk, have that effect: that new milk, especially asses' milk, stimulates still more when it sours on the stomach; and, that whey, turned sour, will purge strongly: that most part of fruits are, likewise, laxative; and, that some of them, as grapes, will throw such as take them immoderately, into a cholera morbus, or incurable diarrhœa.

"When the body cannot be kept open without medicine, gentle doses of rhubarb may be taken twice or thrice a-week. This is not near so injurious to the stomach as aloes, jalap, or the other drastic purgatives so much in use. Infusions of senna and manna may, likewise, be taken; or, half an ounce of tartarized alkali dissolved in water-gruel. About the size of a nutmeg of lenitive electuary, taken twice or thrice a-day, generally answers the purpose very well."

Encyclop. Britann.

" In healthy individuals, the evacuation by stool usually takes place once or twice a-day; and, according to the habits of the person, either in the morning or evening. Those who are troubled with costiveness, should visit the customary retreat, regularly every morning at a fixed hour; and thus, endeavour to promote this necessary evacuation by proper efforts, though they may not, at the moment, feel much inclination; for, it is well founded, on experience, that nature, at length, will be habituated, by perseverance, to observe a certain regularity in this respect. The most proper time for these attempts is, early in the morning, or late in the evening.

" Although these trials should repeatedly fail, we must not be discouraged from persevering in them; nor, ought we, without absolute necessity, to choose any other than the wonted hour to attain the end proposed; so that this, at length, may become the only time, when nature shall spontaneously assist our endeavours. During these practices, however, the choice of our diet is of the greatest moment, as we can powerfully promote the desired end, by living chiefly upon rye-bread, spinage, boiled fruit, particularly prunes, decoctions of currants, the sweet and emollient vegetables, especially the beet root, and occasionally, salted meat; the last of which should be assisted with sufficient drink, not of the spirituous kind, but rather of a mild and aperient nature, such as sweet table beer, whey, infusions of malt, apples, pears, and the like.

" While too much rest, and a sedentary life, prevent this species of daily evacuation, gentle exercise, and serenity of mind, seldom fail to promote it. In many families, costiveness is an habitual and

hereditary distemper. Sometimes, too, it originates from a weakness of the intestinal canal, brought on by diseases, but more frequently from the habitual use of certain substances of food and drink; for instance, the lean flesh of quadrupeds, game, the leguminous vegetables, red port wine, strong and bitter malt liquor, and the like. Hence, the predisposing cause of the complaint should always be attended to. If it arise from weakness, red wine, bitter ale, and other corroborants, are well calculated to effect a cure. In every instance, frequent exercise in the open air is extremely useful.

"When the excrements are too dry, and in a globular form, they often occasion head-ach, inflammation of the eyes, febrile complaints, hemorrhoids, ruptures, paralytic affections, and, frequently, produce flatulency and spasms, in persons subject to hysterics and hypochondriasis: nay, even the suppression of flatulency is extremely dangerous. Those who are apt to delay going to stool, expose themselves to many serious inconveniences; and when this sensation is lost, it does not usually return for some time. The fœces collected in the intestinal canal, powerfully distend it; give rise to the blind hemorrhoids; and, sometimes, even to the falling down of the anus; the excrements become dry, and their reabsorbed fluid parts irritate and vitiate the blood, and produce many obstinate distempers. If a person has been costive for several days, the inclination to go to stool is, sometimes, lost, until restored by artificial means.

"Obstructions and costiveness, of which many persons now complain, are owing to a great variety of causes; but chiefly, to our luxurious mode of living, and to the custom of making too many

meals through the day. The time requisite to the digestion of a meal, cannot be well ascertained, as some stomachs concoct quickly, and others slowly; and there is a remarkable difference in the degrees of digestibility among the various species of food; but this may serve as a general rule, that we ought never to take a new supply of food till the preceding meal be digested." *Willich.*

" It is not easy to comprehend the train of evils brought upon the constitution by habitual costiveness, except by those who have experienced its oppressive effects.

" The stomach and bowels cannot be distended beyond a certain degree, without creating pain; but that will be different, at different times, according to the sensibility and irritability then existing in the habit of body; thus, when preternaturally tender, irritable, or inflamed, wind, or ingesta, which put them upon the stretch, will occasion intolerable pain, sickness, and oppression; which, in their sound state, would produce no such bad effects.

" The retention of fœces longer than is natural, by distending the alimentary tube, will weaken its fibres; and, from the pressure it occasions on the contiguous viscera, obstruct the circulation, and prevent that free and equal distribution of blood through their several vessels, which is necessary to support the secretions and maintain health. Those which are the most vascular, and sustain the greatest pressure, by interruption of their functions, will suffer most; namely, the stomach, liver, and mesentery. From the same cause, the blood being obstructed in the interior vessels, those sent to the superior parts will be overcharged with it, and the

head affected with pain, stupor, or giddiness, confusion of ideas, and loss of memory.

"The stomach, in particular, is greatly injured by costiveness; for, when the alimentary tube proceeding from it, is thereby obstructed, it will necessarily be oppressed and deficient in its office; hence, want of appetite and digestion, attended with sickness or vomiting; and, frequently, the hemorrhoids or piles.

"A costive habit of body may proceed from various causes, viz. from a defect, or obstruction of bile, or its not being sufficiently exalted to stimulate the intestines, and quicken their expulsive motion; from the liberal use of opium, which diminishes their irritability and suspends their power; or, from the abuse of sudorifics, and drastic purgatives, which rob the intestines of their natural moisture; or, astringent and spirituous liquors, which contract their vessels and lock it up.

"In constipation of the bowels from want of bile, or where it is too thin and watery, the herb fumitory infused in rennet whey, with a small portion of lixivial salt, will be found an effectual medicine; but, in those of cold phlegmatic constitutions, equal parts of almond soap and aloes may be taken in pills with more advantage. Where there are thirst and fever, a solution of the crystals of tartar, with a sixth part of borax, in the proportion of one ounce in the whole, to a quart of pure water, sweetened with manna or honey, to render it palatable, I have found a most grateful and efficacious, neutral laxative: it is not only gently solutive, but also promotes the urinary discharge, abates febrile heat, and resists putrefaction.

"In those of plethoric habits, affected with head-ach, or nausea at stomach; the saline draughts will be most proper; and diet of a cooling laxative quality should be used by the patient; as that with stewed red cabbage, or beet-root, ripe fruits, new figs, or raisins, rennet whey, with honey, fresh wort, soft ale, &c. to which may be added, Seltzer water for common drink.

"There is another species of habitual costiveness which has been little attended to, and which requires a very different method of treatment. This arises from a weak debilitated state of the bowels, and their want of sufficient expulsive power to discharge their contents. Those who are advanced in life, and much reduced in strength by preceding illness, are the most subject to this malady; in the cure of which, I have found large and repeated doses of the Peruvian bark, with a fourth part of crude tartar, an effectual remedy, given in the form of an electuary, with syrup of roses. It seems to act by giving more strength and firmness to the fibres of the intestinal canal.

"When the bowels are weak and inactive; rising more early in the morning, exercise, the flesh brush, and cold bath, will be found beneficial.

"To preserve the body in the due exercise of its functions, every one who eats plentifully should generally have two motions each day; and the great Mr. Locke, in his treatise on education, points out the necessity of this intestinal evacuation as greatly contributing to health; towards which it will, therefore, be proper for every one, night and morning, to solicit the call of nature, till it becomes a constant habit; by which means, he will, in a great measure, avoid the inconvenience

of costiveness, and all its disagreeable consequences." *Leake.*

Costiveness is not the only irregularity of the alvine excretions: the bowels are, likewise, often affected with too frequent ejections; and, in certain constitutions, one is not uncommonly alternated with the other. The latter, like the former, may be owing to a variety of causes; and, therefore, may require a difference of treatment. When occasioned by similar causes, it is removed by the same means; for instance, if it proceed from debility, exercise and tonic medicines are indicated; but, if from other causes, these must be removed and counteracted.

There is one kind of diarrhœa or looseness, which deserves particular notice: it is occasioned by eating aliment of a kind, or more in quantity than the stomach can digest; hence, it passes off by stool unconcocted, and unassimilated; and without nourishing the body. Persons of weak digestion should be particular, both in the kind and quantity of their food; and ought, by no means, to eat what is disagreeable, nor to exceed in quantity; which their own experience, with attention, will teach them; and, therefore, I need not point out.

The quantity of the intestinal evacuations depends, in part, on some of the others, particularly on those of urine and sweat; but the greatest influence and difference are betwixt the two latter.

A lax is an almost certain consequence of overeating, in some persons of good digestions, and sound constitutions: indeed, so generally so, that they will freely indulge in a full meal, expecting it to be carried off that way; and will even gorge their stomachs in order to purge their bowels: but, al-

though the evacuation be considerable that way, and is doubtless the method which nature takes to exonerate herself from the indigestible burden, yet the practice is, by no means, salutary, nor commendable; for, by a frequent repetition and long continuance, the stomach loses its tone, and the digestion becomes impaired; so that the appetite ceases, and dyspeptic symptoms follow, with an habitual looseness, continued merely through an overdistended and relaxed state of the alimentary canal, which frequently requires, and even baffles all the astringent and bracing powers of medicine to cure.

It is a fact, that all food taken into the stomach, which is not properly digested, will not become assimilated to the animal fluids, but will turn acrid, and add little or nothing to the nourishment and support of the body: hence it passes off by frequent liquid stools.

Some may think, that frequent and hearty meals prevent costiveness; but the reverse of this is true, unless in stomachs which do not properly digest the food: and it ought to be an established maxim, not to eat a second one, till the first be digested; which, generally, takes about the space of four hours.

"Looseness, or diarrhœa, is a malady extremely common; being sometimes a primary disease, and sometimes only a symptom or an effect of others. Sometimes, it is a salutary effort of nature, such as the physician ought to imitate and bring on by art. It is also familiar to infants, and to people of a certain constitution; and to them costiveness is very prejudicial. It may arise, in the first place, from something taken into the body, or generated in the intestines; from a fermentation and corrup-

tion of the mass of aliments; from the bile being too abundant and acrid; or, from blood or pus poured into the intestines; from the intestines themselves being eroded, or deprived of their natural mucus; from the humours being driven from the surface of the body towards the inward parts, as by cold, especially when applied to the feet; or, from a general corruption of the whole body, as in phthisis, hectic, or putrid fever, especially towards the end of these disorders. In fevers, it is sometimes salutary, or even puts an end to the disease altogether; or, at least, renders it milder: more frequently, however, deriving its origin from putrescency, it is of no service, but rather exhausts the strength of the patient. A diarrhœa, likewise, almost incurable, and often mortal in a short time, frequently arises after the operation for the fistula in ano. Some have their intestines so extremely weak and moveable, that, from the slightest cause, such as catching cold, any violent commotion of the mind, &c. they are subject to a violent diarrhœa. Lastly, whatever be its origin, if it hath continued for a long time, the viscera are rendered so weak and irritable, that the disease, though often removed, still returns from the slightest causes, and even such as are not easily discovered.

"A diarrhœa proves very pernicious, by hindering digestion, and the nourishment of the body; for the stomach is commonly affected, and the aliments pass through the intestines so quickly, that they can neither be properly digested, nor are the lacteals able to absorb the chyle from them as they go along. Such a violent evacuation is, also, hurtful, by exhausting the body, and carrying off a great quantity of the nutritious matter from the blood. Neither, indeed, is it only the alimentary

mass which is thrown out sooner than it ought to be; but, at the same time, a great quantity of the fluids secreted in the intestines, so that the whole body quickly partakes of the debility.

"Sometimes, a violent and long continued diarrhœa rises to such a height, that the aliment is discharged with little or no alteration. Sometimes, also, though rarely, from a similar cause, or from the obstruction of the mesenteric glands, and its other passages into the blood, the chyle itself is thrown out, like milk, along with the excrements; and this disease is called the fluxus cœliacus."

Encyclop. Britann.

"If it be our wish to preserve health, we ought not only to guard against costiveness, but likewise to prevent, by all proper means, too frequent excretions. Copious evacuations of this kind exsiccate the body, and deprive it of that strength, which is necessary to support its exertions. Persons subject to diarrhœa, cannot be too cautious in the use of watery, saline, and easily fermentable articles of food and drink; and, in avoiding violent fits of anger and other passions. On the contrary, they will promote their health, by using provisions of a drying nature, drinking a well-fermented bitter beer or ale; or, if they can afford it, good old wine: all of which have the beneficial tendency to promote perspiration, and, thus, prevent superfluous humidity in the body.

"Loose and frequent stools are common with those who take more aliment than their stomachs can digest; for the food, from the stimulus occasioned by its corruption in the alimentary canal, is too soon ejected, without being duly assimilated. Hence, debilitated persons, who eat immoderately, generally, are thinner and less muscular than

others, who observe a regular and temperate diet. The stools are a tolerable criterion of the quantity and quality of the food we have taken, and whether the digestive power be adequate to its concoction: for, in weak intestines, the unassimilated matter of food turns acrid, and contributes nothing to the nourishment of the body. It is not the man who takes comparatively little food that can be called temperate, but rather that person who makes use of no more aliment than he is able to digest. Thin and copious stools are a certain proof of indigestion.

"If too copious evacuations proceed from a relaxed state of the intestines, daily exercise is of considerable efficacy; for the fibres of the whole body are thereby invigorated, and, if irritating or peccant humours should be the cause of the complaint, nothing is better calculated to expel them by perspiration, urine, or stool, than spirited and persevering muscular motion, till the body be tolerably fatigued.

'It is advisable to use all proper means of keeping, if possible, this important excretion in due regularity; and, to attain that desirable end, it is likewise necessary to abandon all strait garments, especially laced stays and tight waistbands."

Willich.

"Habitual diarrhœa occasioned by grief or distress of mind, by some deemed incurable, is a disorder of the bowels directly opposite to the former. This complaint seems plainly to be an atonic affection of the bowels, and to proceed from a diminution of their nervous power, as well as from obstructed perspiration, which generally attends it. I am convinced, by experience, that constant exercise on horseback, and taking pleasant jour-

neys, with cheerful company, in an open carriage, and dry, pure air, when new objects strike the eye, and engage the attention, with the use of a flesh brush, and flannel worn next the skin, will always relieve, and often perfectly cure this obstinate disease. If the patient has not natural rest, it will be proper to direct the camphorated mixture, with tincture of opium and antimony, which will invigorate the nerves, promote perspiration, and procure sleep." *Leake.*

Section 2. *By Urine.*

This evacuation differs much, both in quantity and quality, under different circumstances, being much scarcer, and more acrid, in hot weather, seasons, and climates, than in cold.

It is, also, well known, that this discharge is much influenced, not only in quantity, but quality, by the food and drink taken in. If we live upon thin watery food, with plenty of drink, it will be increased, and of a pale colour. If we eat freely of vegetables of the alliaceæ or garlic tribe; or, take medicines of the terebinthinæ or turpentine class; or, even if they be applied externally and plentifully to the body, they will be perceived by their smell in the urine.

Some people will retain their water much longer than others; for which reason, no certain time or standard can be fixed: it ought not, however, to exceed four or five hours in the day-time.

The practice of retaining the urine too long, whether through delicacy, neglect, or necessity, is equally injurious and dangerous to health; it being, sometimes, productive of a total suppression of urine, or of a palsy of the bladder, which is

relieved only by the introduction of the catheter. Women, owing to the larger size of their bladders, are able to retain their water longer, and may, with ease and safety, than men.

A long retention of the urine is thought to favour a deposition of mucus or sand in the bladder, which frequently forms a nucleus for the gravel or stone; and, therefore, may, sometimes, lay the foundation of that excruciating disorder.

People may, however, get in a habit of voiding it too often, whereby the bladder becomes contracted, and loses the power of retaining it a sufficient length of time; but this error is much less common than the former, and more rarely productive of bad consequences.

It is observed, that the feeble and relaxed, and such as are affected with hypochondriac and hysteric symptoms, pass more urine, and of a paler colour, than the robust and vigorous. An excess of this discharge is called diabetes, which generally proves fatal, sooner or later, to the unhappy sufferer.

The connexion between the urine and perspiration is very great, which is clearly proved by the increase of the latter diminishing the former, and the reverse.

"Although the quantity of urine to be voided through the day cannot be accurately ascertained, yet this evacuation ought always to be proportionate to the drink we have taken, and to the degree of perspiration. If we perceive a deficiency in this discharge, we ought to take moderate exercise, to drink light, thin, and acidulated diluents, and to eat a variety of such herbs and fruits as possess diuretic virtues: of this nature, are parsley, asparagus, celery, juniper-berries, straw-berries, cher-

ries, and the like. We should be careful not to retain the urine too long: a practice which would occasion relaxation and palsy of the bladder, and which might, at length, produce the gravel or stone.

"Many maladies may arise from voiding too small a quantity of urine: hence, the necessity of attending to this excretion, from which we may frequently discover the cause of the disease. The relative state of vigour or debility in the individual, the mode of life, more or less drink, dry or damp weather, all produce a difference in the quantity of this evacuation. Robust persons eject less urine than the debilitated. A copious emission of it is always a symptom of a relaxed body, which is not possessed of sufficient energy to expel its noxious particles by transpiration through the cutaneous vessels.

"Among the rules and cautions for the proper management of this evacuation, it deserves to be remarked, that it is hurtful to make water too often, or before a proper quantity of it be accumulated in the bladder. By such practice, this vessel gradually contracts into a narrower compass than is assigned by nature, and cannot again be easily distended. Too long a retention of urine, on the contrary, preternaturally enlarges the bladder, weakens its muscular power, and may, with the advancement of age, occasion ischuria, or a total suppression; besides which, it promotes a deposition of mucus and sand in the bladder, and inevitably leads to that troublesome and painful complaint, the stone." *Willich.*

Section 3. *By Perspiration.*

Our health greatly depends on a proper state of

this excretion. The matter discharged by it being of an irritating, acrid nature, frequently produces, when obstructed, more or less commotion, or febrile disorder in the system.

It is judged, by calculation, that the quantity discharged this way is about four or five pounds weight, in a healthy person, within twenty-four hours.

This evacuation, as well as that of urine, is much affected by the different circumstances under which we are; it being greater in summer than in winter; and it is thought to be less immediately after a plentiful meal, than at other times: it is, also, lessened by cold, violent pain, and by various external applications, which obstruct and clog the pores of the skin.

It is promoted by exercise, warm bathing, cleanliness, stimulating diaphoretic medicines, and by sleeping on feather beds.

Like the other evacuations, this may be excessive, when it indicates great debility, and should be managed with prudence. When too profuse, or to the extent of night-sweats, it ought to be treated with cold bathing, astringent, and strengthening medicines.

If suppressed, with symptoms of a cold, pain in the head, bowels, &c. a gentle purge of rob of elder-berries, cream of tartar, or the like, will be suitable. In milder cases, warm diluent drinks, weak wine whey, and bathing the feet in warm water, with confinement to bed, or a warm room, will be found sufficient.

Most cutaneous disorders and defœdations are occasioned by an obstructed perspiration, and by want of due attention to this important excretion: hence, the necessity and advantage of frequent

bathing and ablutions: a practice which appears to have been much more common in former ages, than at the present day.

It deserves, moreover, to be remarked, and ought to be particularly remembered, that an obstructed perspiration being reiterated, often excites a cough, pain in the side or breast, laborious or accelerated respiration, &c: symptoms which not unfrequently portend, and usher in the increasing, and, generally, fatal disease, hectic fever or consumption. All, therefore, especially such as are of a phthisical predisposition or temperament, and are affected in that manner; and have reason to fear that consequence, ought to pay the earliest, and strictest attention to their situation and health: and, although, at first, they may not be much amiss, yet the sequel too often proves, that it would be better to begin early to avoid all exciting and increasing causes, and to mitigate urgent symptoms as they occur; to describe which, is not my present province.

Persons subject to periodical pain or hæmorrhages, frequently suffer an attack by obstructed perspiration; which should, therefore, in those cases, always be prevented, if possible; and, if it take place, it ought to be gently promoted by proper means. Those persons who perspire or sweat freely through the soles of their feet, should be particularly careful not to check that discharge by any means, but should, every night, before going to bed, warm and dry them well.

"From a suppression of any of the secretions, or a disorder of any of the secretory organs, many mischiefs may arise. A diminution of perspiration produces plethora, lassitude, languor, depression of mind, bad digestion, loss of appetite, and even

a general corruption of the humours from the retention of such a quantity of putrescent matter. The more suddenly the diminution or suppression of the perspiration takes place, the sooner the mischief is produced, and the greater it is; not only by retaining the matter which ought to be thrown out; but by repelling the humours from the surface of the body, and directing them to other parts: whence, fevers, inflammations, congestions of the blood, &c. frequently take place.

"Thus, suppression of perspiration may arise from many different causes; as from cold suddenly applied to the body when very hot; sometimes, from very violent passions of the mind; or, from spasmodic diseases, as the hysterics, &c. It may be suppressed, also, by that kind of constriction of the vessels of the skin which is produced by various kinds of fevers, the nature of which has hitherto been but little known.

"Excessive perspiration, or sweating, is injurious by debilitating the body, relaxing the skin, and exposing the patient to all the evils which arise from catching cold. It may even be carried to such a height as to produce fainting and death; though it must be owned, that we cannot easily bring examples of people having, from this cause, their blood inspissated, corrupted, or being thence made liable to inflammation and fevers."

Encyclop. Britann.

"Of all the natural evacuations, none is so important and extensive; none is carried on with less interruption; and none frees the body from so many impurities, particularly from acrid and thin humours, as insensible perspiration. The health of man chiefly depends on the proper state of this function: the irregularities occurring in it, occasi-

onally produce peevishness of temper, head-ach, disturbed sleep, heaviness in the limbs, &c.; and, on the contrary, we find ourselves most lively and vigorous when it is duly and uniformly performed.

"Most of the febrile diseases arise from a suppressed perspiration; as the exuded matter is of an acrid and irritating nature. To transpire beneficially, means, that the impure and pernicious particles only be ejected, in which case, the perspiration is invisible and imperceptible. This is so essential a requisite, that, without it, the health of the individual cannot long subsist. The reciprocal connexion between the functions of the stomach and of perspiration, is so obvious, that, if the latter be checked, the former is immediately affected; and the reverse takes place, if the stomach be disordered." *Willich.*

"Perspiration is, also, absolutely necessary in the animal economy, for purifying the mass of blood, and discharging it of a number of useless heterogeneous particles, which might corrupt it. Hence, it is, that upon a stoppage of the usual perspiration, there arise so many indispositions, particularly fevers, agues, rheums, &c. Too much perspiration occasions weakness, swoonings, sudden death; too little, or none at all, occasions the capillary vessels to dry, wither, and perish. Hence, also, the larger emunctories come to be obstructed; hence, the circulation is disturbed, sharp humours retained; and, hence, putridity, crudity, fevers, inflammations, and imposthumes.

"Perspiration is influenced by the passions of the mind. Thus, anger and joy increase, and fear and sadness lessen both perspiration and urine. Anger causes a strong motion in the membranes of

the heart, and quickens its contraction and dilatation; and, thereby, quickens the contraction and dilatation of the blood-vessels and secerning ducts; and, of consequence, increases the discharges of perspiration and urine; and that, more or less, in proportion to the strength or continuance of the passion. Joy affects these discharges in like manner as anger. In the passions of fear and sorrow, perspiration and urine are lessened, by the depression of the activity of the soul under those passions." *Hall's Encyclop.*

Section 4. *By the Saliva or Spittle.*

Besides the excretions above mentioned, there are others, which, although not of equal quantity, have a considerable share in the health of the body. These are, 1. The saliva or spittle; which is not intended by nature to be directly or immediately excreted out of the body, but first to prepare and soften the food for concoction or digestion in the stomach.* It is accordingly thrown out in the largest quantity during mastication, when most wanted for that purpose: hence, the impropriety of spitting out the saliva, either through an indelicate and unnecessary habit, or the practice of using tobacco; which, besides the uncleanliness, trouble, and expense attending it, creates, it is appre-

* As, however, the saliva has been thought to absorb infectious miasma, it may be safest not to swallow it whilst in rooms of the sick infected with contagious or pestilential diseases; but rather to chew some aromatic substances that will promote a gentle discharge of it, such as sage, cinnamon, myrrh, calamus, orange peel, or the like. It is owing, it is apprehended, more to this excretion of the spittle, than to any preventive power in the remedies employed, that some persons have, whilst chewing tobacco, or certain other substances, been preserved from taking the plague, and other contagious diseases.

hended, as many disorders as it cures. And here it may not be improper to make some remarks, and to adduce some authorities respecting the use of that article. Those who practise this unpleasant and nauseous custom, commonly use it either immediately before, or after meals; which is, of all others, the most improper time; for the spittle is then most wanted in the mastication and digestion of the food. Those who judge it necessary to smoke immediately after a hearty meal, ought to eat sparingly, and to avoid oily, rich sauces, and all high-seasoned meats, particularly those termed made-dishes.

I do not say, that tobacco is an useless medicine; for, I believe it to be an efficacious and powerful one, when necessarily and properly used as such; but it will, doubtless, be admitted, that its medicinal use is far less general than its habitual; and that, by the latter, the former is much lost. When it is used, it is best adapted for persons of gross, corpulent, and phlegmatic habits; and for those who labour under catarrhal and asthmatic complaints, more especially in cold damp weather.

Snuffing has, sometimes, been thought to be useful in disorders of the nose and eyes; but its long-continued and habitual use rarely fails to injure those parts, clog the head, and, sometimes, even to impede respiration, and impair the voice and memory. The appetite for tobacco is never natural, but wholly artificial or habitual; agreeable to a general law of nature, which reconciles most customs and habits to us by use, that were, at first, disagreeable.

It has been observed, when the spittle has been discharged by accidental means, and has been prevented from passing into the stomach with the

food, that the digestion became impaired, and the body emaciated; which further shews its indispensable use, and the impropriety of the habit of ejecting it.

Some, wishing to retain their favourite practice of chewing or smoking tobacco; and fearing the evil consequences of ejecting their saliva, are in the habit of swallowing it, as at other times; but this is, by no means, advisable or safe for all persons; for it being of a narcotic nature, its long-continued use may have the same effect on the stomach and digestive organs, as opium and other medicines of that kind. And the experience of the most eminent physicians has accordingly ranked its liberal or excessive use among the causes of dyspepsia or indigestion, which has now become so common a disease.

The oil of tobacco is of so active and virulent a nature, that a few drops of it have proved fatal.

"Whenever the saliva is lavishly spit away, we remove one of the strongest causes of hunger and digestion. The chyle prepared without this fluid, is depraved, and the blood is vitiated for want of it. I once tried an experiment on myself, by spitting out all my saliva. The consequence was, that I lost my appetite. Hence, we see the pernicious effects of chewing and smoking tobacco. I am of opinion, that smoking tobacco is very pernicious to lean and hypochondriacal persons, by destroying their appetite and weakening digestion. When this celebrated plant was first brought into use in Europe, it was cried up for a certain antidote to hunger; but it was soon observed, that the number of hypochondriacal and consumptive people were greatly increased by its use." *Boerhaave.*

"The saliva should not be confounded with mucus, or slime: the former is a fluid not intended

by nature to be evacuated, as it serves the important purpose of mixing and preparing the food for the stomach; hence, it ought not to be unnecessarily wasted by frequent spitting: the latter, mucus, may be safely thrown out as burdensome and offensive. The absurd custom of smoking tobacco is extremely prejudicial, as it weakens the organs of digestion, deprives the body of many useful fluids, and has a direct tendency to emaciation, particularly in young persons, and those of lean and dry fibres. To these, it is the more detrimental, as it promotes not only the spitting of saliva, but likewise other evacuations. This plant is possessed of narcotic properties, by which it produces, in those who first begin to smoke it, giddiness, cold sweats, vomiting, purging; and, from its stimulus on the salival glands, a copious flow of the saliva.

"Frequent smoking makes the teeth yellow and black; while clay-pipes are apt to canker them to such an alarming degree as to infect the breath, and produce putrid ulcers in the gums. Delicate persons, especially, suffer from this nauseous habit; as it has a direct tendency not only to exsiccate their bodies, by contaminating the fluids; rendering them acrid; and vitiating the digestion and assimilation of food; but, likewise, to impair the mental faculties. These effects, however, are less to be apprehended, if smoking has become habitual, and is not carried to excess. To persons of a middle age, or those of full growth, particularly the corpulent, the phlegmatic, and such as are subject to catarrhal complaints, it may occasionally be of service, if used with moderation, especially in damp, cold, and hazy weather. Yet such persons ought never to smoke immoderately before or after a meal, as the saliva is materially requisite to assist the concoction of food, which is not accom-

plished till about three or four hours after dinner: they should smoke slowly; frequently drink small draughts of beer, ale, tea, or any other diluent liquors; but neither spirits, nor wine; and, lastly, they should use a clean pipe with a long tube; for the oil of tobacco settling on the sides of the pipe is one of the most acrimonious and hurtful substances, and may thus be absorbed, and mixed with the fluids of the body.

"The remarks made with respect to the saliva and smoking, are also applicable to the mucus of the nose, and the custom of taking snuff. The question here is not respecting that catarrhal secretion of viscid slime, which is ejected as useless. Snuff stimulates the membrane of the nose, and, sympathetically, the whole body; by which, the mental powers are, in a slight degree, affected. If used as a medicine only, and on occasions that require such a stimulus, it may be productive of some advantage; but a liquid sternutatory deserves every preference to a powder, which, though at first stimulating and occasioning a flow of viscous matter, in the end, always obstructs the nostrils. And if this stimulus be too violent, it may bring on so profuse a discharge of matter from the delicate membrane lining the nose, as to relax and corrode it, and to produce a polypus, or a concretion of clotted blood in the nostrils.

"In several diseases of the head, eyes, and ears, however, the taking of snuff may occasionally supply the place of an artificial issue; though an extravagant use of it will most certainly produce a contrary effect; namely, an accumulation of matter in the head, bleeding of the nose, and other complaints. Farther, it would be extremely injudicious to advise the use of snuff to persons of

a phthisical constitution, or those afflicted with internal ulcers, and subject to spitting of blood; as, by the violent sneezing it at first occasions, such individuals might expose themselves to imminent danger. Public speakers of every kind, as well as teachers of languages, and, in short, all those to whom a clear and distinct articulation is of consequence, ought to avoid this habit, which, when carried to excess, is, in this respect, extremely prejudicial. Those, too, who have a regard for cleanliness, will not accustom themselves to this hurtful practice. In short, the continual use of snuff gradually vitiates the organs of smell, weakens the faculty of sight, by withdrawing the humours from the eyes, impairs the sense of hearing, renders breathing difficult, depraves the palate, and, if taken too freely, falls into the stomach, and, in a high degree, injures the organs of digestion.

"Besides the many bad effects already mentioned, taking snuff may be attended with another consequence, equally dangerous to the alimentary canal. While the nose is continually obstructed, and a free respiration is impeded, the habitual snuff-taker generally breathes through the mouth only: he is always obliged to keep his mouth partly open, and, consequently, to inspire more frequently, and with greater efforts. Thus, by inhaling too much air, he probably lays the foundation of that troublesome flatulency which is common among those hypochondriacs who habitually take snuff. Hence, every person, unless good reasons can be assigned in favour of it, ought to be seriously dissuaded from the use of snuff, as well as of tobacco: and it deserves to be remarked, that both these practices may be safely, and cannot be too sud-

denly relinquished, as soon as reason prevails over sensual gratifications." *Willich.*

"We have been told, that tobacco, when chewed, is a preservative against hunger; but this is a vulgar error; for, in reality, it may more properly be said to destroy appetite by the profuse discharge of saliva, which has already been considered as a powerful dissolving fluid, essential both to appetite and digestion.

"In smoking, the fumes of tobacco induce a kind of pleasing insensibility, not easily described. Its narcotic odour, thus administered, equally infatuates the ignorant savage, and the intelligent philosopher; but, by the large expense of saliva thereby occasioned, it is productive of many disorders of the head and stomach, particularly the last." *Leake.*

"In no one view, is it possible to contemplate the creature man in a more absurd and ridiculous light, than in his attachment to tobacco. This weed is of a stimulating nature, whether it be used in smoking, chewing, or in snuff. Like opium and spirituous liquors, it is sought for in all those cases where the body is debilitated indirectly by intemperance in eating, or by excessive application to study, or business, or directly by sedative passions of the mind, particularly by grief and fear.

"The progress of habit in the use of tobacco is exactly the same as in the use of spirituous liquors. The slaves of it begin by using it only after dinner; then during the whole afternoon and evening; afterwards, before dinner; then before breakfast; and, finally, during the whole night. I knew a lady who had passed through all these stages, who used to wake regularly two or three times every

night to compose her system with fresh doses of snuff. Again, the progress in the decay of the sensibility of the nose to the stimulus of snuff, is analogous to the decay of the sensibility of the stomach to the stimulus of spirituous liquors. It feels, for a while, the action of rappee; next, it requires Scotch snuff; afterwards, Irish blackguard; and, finally, it is affected only by a composition of tobacco and ground glass. This mixture is to the nose, what Cayenne pepper and Jamaica spirits are to the stomachs of habitual dram-drinkers.

"The appetite for tobacco is wholly artificial. No person was ever born with a relish for it. Even in those persons who are much attached to it, nature frequently recovers her disrelish to it. It ceases to be agreeable in every febrile indisposition. This is so invariably true, that a disrelish to it is often a sign of an approaching, and the return of the appetite for it, a sign of a departing fever.

"1. It impairs the appetite. Where it does not produce this effect, 2. It prevents the early and complete digestion of the food; and, thereby, induces distressing and incurable diseases, not only of the stomach, but of the whole body. This effect of tobacco is the result of the waste of the saliva in chewing, and smoking, or of the tobacco insinuating itself into the stomach, when used in chewing or snuffing. I once lost a young man of seventeen years of age, of a pulmonary consumption, whose disorder was brought on by the intemperate use of segars.

"3. It produces many of those diseases which are supposed to be seated in the nerves. The late Sir John Pringle was subject, in the evening of his life, to tremors in his hands. In his last visit

to France, a few years before he died, in company with Dr. Franklin, he was requested by the Doctor to observe, that the same disorder was very common among those people of fashion who were great snuffers. Sir John was led by this remark, to suspect that his tremors were occasioned by snuff, which he took in large quantities. He immediately left off taking it, and soon afterwards recovered the perfect use of his hands. I have seen head-ach, vertigo, and epilepsy produced by the use of tobacco.

" 4. A citizen of Philadelphia lost all his teeth by drawing the hot smoke of tobacco into his mouth, by means of a short pipe.

" 5. Tobacco, when used in the form of snuff, seldom fails of impairing the voice by obstructing the nose. It, moreover, imparts to the complexion a disagreeable dusky colour.

" But the use of tobacco has been known to produce a more serious effect upon the mind, than the distress that has been mentioned. Sir John Pringle's memory was impaired by snuff. This was proved by his recovering the perfect exercise of it after he left off taking snuff, agreeably to the advice of his friend Dr. Franklin.

" In answer to these observations upon the morbid effects of tobacco, it has been said,

" 1. That it possesses many medical virtues. I grant it; and the facts which establish its utility in medicine, furnish us with additional arguments against the habitual use of it. How feeble would be the effects of opium and bark upon the body, if they constituted a part of the condiments of our daily food. While I admit the efficacy of tobacco as a medicine, I cannot help adding, that some of the diseases, or symptoms of diseases which it re-

lieves, are evidently induced by the habit of using it. Thus, a dram of ardent spirits suspends, for a while, a vomiting, and tremors of the hands: but, who does not know, that those complaints are the effects of the intemperate and habitual use of spirituous liquors?

"2. The advocates for tobacco tell us, that smoking and snuff relieve that uneasiness which succeeds a plentiful meal. I admit, that the stimulus of tobacco restores the system from the indirect weakness which is induced by intemperance in eating; but the relief which is thus obtained, illy compensates for the waste of the saliva in smoking, at a time when it is most wanted; or for the mixture of a portion of the tobacco with the aliment in the stomach by means of snuffing. But why should we cure one evil by producing another? Would it not be much better to obviate the necessity of using tobacco by always eating a moderate meal? The recollection of the remedy probably disposes to that intemperance in eating which produces the uneasiness that has been mentioned.

"3. We are sometimes told, that tobacco is a preservative from contagious diseases. But many facts contradict this assertion. Mr. Howard informs us, that it had no efficacy in checking the contagion of the plague; and repeated experience in Philadelphia has proved, that it is equally ineffectual in preserving those who use it, from the influenza and yellow Fever.

"One of the usual effects of smoking and chewing, is thirst. This thirst cannot be allayed by water; for no sedative, or even insipid liquor, will be relished after the mouth and throat have been exposed to the stimulus of the smoke or juice of tobacco. A desire, of course, is excited for strong

drinks; and these, when taken between meals, soon lead to intemperance and drunkenness. One of the greatest sots I ever knew, acquired a love for ardent spirits by swallowing cuds of tobacco, which he did to escape detection in the use of it; for he had contracted the habit of chewing contrary to the advice and commands of his father. He died of a dropsy under my care in the year 1780.

"In reviewing the account that has been given of the disagreeable and mischievous effects of tobacco, we are led to inquire, what are its uses upon our globe; for we are assured, that nothing exists in vain. Poison is a relative term, and the most noxious plants have been discovered to afford sustenance to certain animals. But what animal, besides man, will take tobacco into its mouth? Horses, cows, sheep, cats, dogs, and even hogs refuse to taste it. Flies, moschetoes, and the moth, are chased from our clothes by the smell of it. But let us not arraign the wisdom and economy of nature in the production of this plant. Modern travellers have at length discovered, that it constitutes the food of a solitary and filthy wild beast, well known in the deserts of Africa, by the name of the Rock-goat." *Rush.*

2. The bile and pancreatic juice are both necessary to be duly secreted and excreted into the alimentary canal. An obstruction of the former is often occasioned by violent fits of anger, as already mentioned under that head; and is well known to produce the jaundice. When the flow of the latter is interrupted, it tends to produce a scirrhosity, or an induration of the part that separates it.

There are several other secretions and excretions which occasionally require attention in preserving health: namely, the mucus of the nose; of the wind-pipe; the milk; the semen; and the wax of the ears; but, for which, I do not intend a particular consideration in this work.

CHAPTER IX.

SUMMARY OBSERVATIONS ON THE MEANS OF PRESERVING HEALTH, AND PREVENTING DISEASES.

SECTION 1. *"Rules for the management of Valetudinarians.*

"THAT part of the medical system which lays down rules for the preservation of health, and prevention of diseases, termed hygieine, is not to be strictly understood, as if it respected only those people who enjoy perfect health, and who are under no apprehensions of disease; for such seldom either desire or attend to medical advice; but should rather be considered as relating to valetudinarians, or to such as, though not actually sick, may yet have sufficient reason to fear that they will soon become so: hence it is, that the rules must be applied to correct morbific dispositions, and to obviate the various things that were shown to be the remote or possible causes of diseases.

"From the way in which the several temperaments are mentioned by systematic writers, it should seem as if they meant, that every particular constitution must be referred to one or other of the four; but this is far from being reducible to practice; since, by much the greater number of people have constitutions so indistinctly marked, that it is hard to say to which of the temperaments they belong.

"When we actually meet with particular persons who have evidently either, 1. Too much strength and rigidity of fibre, and too much sensibility; 2. Too little strength, and yet too much sensibility; 3. Too much strength, and but little sensibility; or, 4. But little sensibility, joined to weakness; we should look on such persons as more or less in the valetudinary state, who require, that these morbific dispositions be particularly watched, lest they fall into those diseases which are allied to the different temperaments.

"People of the first-mentioned temperament being liable to suffer from continued fevers, especially of the inflammatory species, their scheme of preserving health should consist in temperate living, with respect both to diet and exercise. They should studiously avoid immoderate drinking, and be remarkably cautious lest any of the natural discharges be checked. People of this habit bear evacuations well, especially bleeding: they ought not, however, to lose blood but when they really require to have the quantity lessened; because, too much of this evacuation would be apt to reduce the constitution to the second-mentioned temperament, wherein strength is deficient, but sensibility redundant.

"Persons of the second temperament are re-

markably prone to suffer from painful and spasmodic diseases, and are easily ruffled; and those of the softer sex who have this delicacy of habit, are very much disposed to hysterical complaints. The scheme here should be, to strengthen the solids by moderate exercise, cold-bathing, the peruvian bark, and chalybeate waters. Particular attention should constantly be had to the state of the digestive organs, to prevent them from being overloaded with any species of saburra which might engender flatus, or irritate the sensible membranes of the stomach and intestines, from whence the disorder would soon be communicated to the whole nervous system. Persons of this constitution should never take any of the drastic purges, nor strong emetics; neither should they lose blood but in cases of urgent necessity. But a principal share of management, in these extremely irritable constitutions, consists in avoiding all sudden changes of every sort, especially those with respect to diet and clothing, and in keeping the mind, as much as possible, in a state of tranquillity: hence, the great advantages which people of this frame derive from the use of medicinal waters drunk on the spot, because of that freedom from care and serious business of every kind, which generally obtains in all the places laid out for the reception of valetudinarians.

"The third-mentioned temperament, where there is an excess of strength, and but little sensibility, does not seem remarkably prone to any distressing, or dangerous species of disease; and, therefore, it can hardly be supposed, that persons so circumstanced will either of themselves think of any particular scheme of management, or have recourse to the faculty for their instructions. Such

constitutions, however, we may observe, bear all kinds of evacuations well, and sometimes require them to prevent an overfulness, which might end in an oppression of the brain, or some other organ of importance.

"But the fourth temperament, where we have weakness joined to want of sensibility, is exceedingly apt to fall into tedious and dangerous diseases, arising from defect of absorbing power in the proper sets of vessels, and from remissness of the circulation in general: whence corpulency, dropsy, jaundice, and different degrees of scorbutic affection. In order to prevent these, or any other species of accumulation and depravation of the animal fluids, the people of this constitution should use a generous kind of diet, with brisk exercise, and be careful that none of the secretions be interrupted, nor any of the natural discharges suppressed. These constitutions bear purging well, and often require it; as, also, the use of emetics, which are frequently found necessary to supply the place of exercise, by agitating the abdominal viscera, and are of service to prevent the stagnation of bile, or the accumulation of mucous humours, which hinder digestion, and clog the first passages. The free use of mustard, horse-radish, and the like sort of stimulating dietetics, is serviceable in these torpid habits.

"When the general mass of fluids is accumulated beyond what is conducive to the perfection of health, there arises what the writers term a plethora, which may prove the source of different diseases; and, therefore, when this overfulness begins to produce languor and oppression, care should be taken in time to reduce the body to a proper standard, by abridging the food, and in-

creasing the natural discharges, using more exercise, and indulging less in sleep.

"But, in opposite circumstances, where the fluids have been exhausted, we are to attempt the prevention of further waste by the use of strengthening stomachics, nourishing diet, and indulgence from fatigue of body and mind.

"Vitiated fluids are to be considered as affected, either with the different kinds of general acrimony, or as betraying signs of some of the species of morbific matter which give rise to particular diseases, such as gout, rheumatism, calculus, scurvy, &c.

"During the state of infancy, we may sometimes observe a remarkable acidity, which not only shews itself in the first passages, but, also, seems to contaminate the general mass of fluids. As it takes its rise, however, from weak bowels, our views, when we mean to prevent the ill consequences, must be chiefly directed to strengthen the digestive organs; as, on their soundness, the preparation of good chyle depends; and, hence, small doses of rhubarb and chalybeates, (either the natural chalybeate waters mixed with milk, or the flores martiales in doses of a few grains, according to the age of the child,) are to be administered; and the diet is to be so regulated, as not to add to this acid tendency. Brisk exercise is, likewise, to be enjoined, with frictions on the stomach, belly, and lower extremites.

"Where the fluids tend to the putrescent state, which shews itself by fetid breath, spunginess, and bleeding of the gums, a bloated look, and livid cast, the diet then should be chiefly of fresh vegetables and ripe fruits, with wine in moderation, brisk exercise, and strengthening bitters.

"Where acrimony shows itself by itching eruptions, uncommon thirst, and flushing heats, nothing will answer better than such sulphureous waters as the Harrowgate and Moffat in Britain, or the Lucan and Swadlinbar in Ireland; at the same time, using a course of diet that shall be neither acrid nor heating.

"So far with respect to those kinds of morbific matter which do not invariably produce a particular species of disease: but there are others of a specific nature, some of which are generated in the body spontaneously, and seem to arise from errors in diet, or other circumstances of ill management with respect to the animal economy; and, hence, it is sometimes possible, in some degree, if not altogether, to prevent the ill consequences. Thus, there are instances where returns of the gout have been prevented by adhering strictly to a milk diet.

"The rheumatism has, also, sometimes been warded off by wearing a flannel shirt, or by using the cold bath without interruption.

"Calculus may be retarded in its progress, and prevented from creating much distress, by the internal use of soap and lime-water, by soap lees taken in milk, or in veal broth; or by the use of aerated alkaline water, which may, perhaps, be considered as being both more safe and more efficacious; and, at the same time, more pleasant than any of the other practices.

"The scurvy may be prevented by warm clothing, and perseverance in brisk exercise; by drinking wine or cider; and by eating freely of such vegetable substances as can be had in those situations where this disease is most apt to show itself.

"In constitutions where there is an hereditary

disposition to the scrofula, if early precautions be taken to strengthen the solids by cold bathing, a nourishing course of diet, and moderate use of wine, the acrimony which gives rise to the disease will, probably, be prevented from producing any very bad effects.

"The other kinds of morbific matter, which are of a specific nature, are received into the body by infection or contagion.

"The infection of a putrid fever or dysentery, is best prevented, by immediately taking an emetic on the first attack of the sickness or shivering; and, if that do not completely answer, let a large blister be applied between the shoulders. By this method, the nurses and other attendants on the sick in the naval hospitals have often been preserved. As to other infectious morbific matter, we must refer to what has already been said when treating of hydrophobia, poisons, &c.

"The ill effects which may arise from the different species of saburra, are to be obviated, in general, by the prudent administration of emetics, and carefully abstaining from such kinds of food as are known to cause the accumulation of noxious matters in the first passages.

"Crude vegetables, milk, butter, and other oily substances, are to be avoided by persons troubled with a sourness in the stomach. Brisk exercise, especially riding, is to be used; and they are to refrain from fermented liquors. The common drink should be pure water; or water with a very little of some ardent spirit, such as rum or brandy. Seltzer and Vahls water are to be drunk medicinally; and aromatic bitters, infusions, or tinctures, with the acid elixir of vitriol, from ten to twenty drops, will be found serviceable, in order to

strengthen the fibres of the stomach, and promote the expulsion of its contents, thereby preventing the too hasty fermentation of the alimentary mixture. In order to procure immediate relief, magnesia alba, or creta preparata, will seldom fail: the magnesia, as well as the chalk, may be made into lozenges, with a little sugar and mucilage; and, in that form, may be carried about and taken occasionally by people afflicted with the acid saburra.

"In constitutions where there is an exuberance or stagnation of bile, and a troublesome bitterness in the mouth, it is necessary to keep the bowels always free, by taking occasionally small doses of pure aloes, oleum ricini, cream of tartar, some of the common purging salts, or the natural purging waters.

"When there is a tendency to the empyreumatic and rancid saburra, people should carefully avoid all the various kinds of those oily and high-seasoned things, generally termed made-dishes; and eat sparingly of plain meat, without rich sauces, or much gravy; and, in these cases, the most proper drink is pure water.

Section 2. "*Rules for those who enjoy perfect Health.*

"There can be no doubt, that, in general, temperance is the true foundation of health; and yet, the ancient physicians, as we may see in the rules laid down by Celsus, did not scruple to recommend indulgence now and then, and allowed people to exceed, both in eating and drinking; but it is safer to proceed to excess in drink than in meat: and, if the debauch should create any extraordinary or

distressing degree of pain or sickness, and a temporary fever should ensue, there are two ways of shaking it off; either to lie in bed and encourage perspiration, or to get on horseback, and, by brisk exercise, restore the body to its natural state. The choice of these two methods must always be determined by the peculiar circumstances of the parties concerned, and from the experience which they may before have had which agrees best with them.

"If a person should commit excess in eating, especially of high-seasoned things, with rich sauces, a draught of cold water, acidulated with vitrolic acid, will take off the sense of weight at the stomach, and assist digestion, by moderating and keeping within bounds the alimentary fermentation, and thus preventing the generation of too much flatus. The luxury of ices may be here of real service at the tables of the great, as producing similar effects with the cold water acidulated. Persons in these circumstances ought not to lay themselves down to sleep, but should keep up and exercise until they are sensible that the stomach is unloaded, and that they no longer feel any oppressive weight about the præcordia.

"If a man be obliged to fast, he ought, if possible, during that time, to avoid laborious work. After suffering severe hunger, people ought not, at once, to gorge and fill themselves; nor is it proper, after being overfilled, to enjoin an absolute fast; neither is it safe to rest totally immediately after excessive labour; nor suddenly fall hard to work after having been long without motion: in a word, all changes should be by gentle degrees; for, though the constitution of the human body be such, that it can bear many alterations and irregularities

without much danger, yet, when the transitions are extremely sudden, they cannot fail of producing some kind or degree of disorder.

"It is, also, the advice of Celsus, to vary the scenes, of life, and not confine ourselves to any settled rules: but, as inaction renders the body weak and listless, and exercise gives vigour and strength, people should never long omit riding, walking, or going abroad in a carriage: or, other similar engagements, which afford both exercise and amusement, as each shall be found most agreeable or convenient, are to be used in their turns, according to the circumstances and tendency to any particular species of disease. But, when the weakness of old age shall have rendered the body incapable of all these, then dry frictions with the flesh brush will be extremely requisite to preserve health, by accelerating the flow of humours through the smallest orders of vessels, and preventing the fluids from stagnating too long in the cellular interstices of the fleshy parts.

"Sleep is the great restorer of strength; for, during this time, the nutritious particles appear to be chiefly applied to repair the waste, and replace those that have been abraded and washed off by the labour and exercise of the day; but too much indulgence in sleep has many inconveniences, both with respect to body and mind, as it blunts the senses, and encourages the fluids to stagnate in the cellular membrane; whence corpulency, and its necessary consequences, languor and weakness.

"The proper time for sleep is the night season, when darkness and silence naturally bring it on: therefore, day-sleep, in general, is not so refreshing; and, to some people, is really distressful, as creating an unusual giddiness and languor, espe-

cially in persons addicted to literary pursuits. Custom, however, frequently renders sleep in the day necessary; and, in those constitutions where it is found to give real refreshment, it ought to be indulged.

"With regard to the general regimen of diet, it has always been held as a rule, that the softer and milder kinds of aliment are most proper for children and younger subjects; that grown persons should eat what is more substantial; and old people lessen their quantity of solid food, and increase that of their drink." *Encyclop. Britann.*

APPENDIX:

CONTAINING,

OBSERVATIONS

ON

BATHING, CLEANLINESS, VENTILATION, AND

MEDICAL ELECTRICITY;

AND, ON

THE ABUSE OF MEDICINE.

APPENDIX.

I HAVE now gone through the several subjects that I purposed when I began this treatise; but recollecting that there are other particulars which have a great share in preserving health, and preventing diseases, I judged that it would not be improper to add them by way of Appendix to it.

The subjects to which I allude, are Bathing, Cleanliness, Ventilation, and Electricity; and the Abuse of Medicine.

PART I.

OBSERVATIONS ON BATHING, CLEANLINESS, VENTILATION, AND MEDICAL ELECTRICITY.

CHAPTER I.

BATHING.

AMONG the various means used for the cure, as well as for the prevention of diseases, and for the preservation of health in general, none is, perhaps, more useful and salutary, than that of bathing, if rightly understood and conducted. This practice appears, both from history, and the remains of ancient baths still existent, to have been much more common among the ancient Greeks and Romans, than the modern nations of Europe and America. It is said to be very common, at the present day, among the Turks and Egyptians; with whom, as well as the former, it is not only used with a purifying and medicinal intention, but is considered as a species of recreation or pleasurable luxury. Indeed, it is said to make, with them, as it were, a part of diet, and to be used almost as familiarly as eating and sleeping. It is

also said, that the practice there is generally followed with anointing, or perfuming, or both.

Without recurring to ancient example and practice, daily experience now, as well as the consent of all modern authors, sufficiently confirms the utility and efficacy of bathing, when properly applied, both in preventing and curing many diseases, as well as in the preservation of health in general.

Both scripture and medical history mention and recommend bathing and ablutions in the highest terms. Indeed, it is said, that, in some parts of the world, the practice of the bath is so common, that people no more think of going into company, or of attending their places of devotion, without using it, than with unwashed hands and uncombed hair.

Frequent bathing is not only salutary, by promoting the circulation of the blood, and a regular discharge of the excretions, but it is a principal means of conducing to cleanliness, which is an important one of preserving health, and preventing diseases. But, as its nature and effects are different, according to the temperature of the water used, it will be necessary, before treating further on the subject, to divide it into two general classes, 1. Cold or cool bathing. 2. Hot or warm bathing. Each of which may be subdivided into two other classes: 1. Natural; 2. Artificial. For instance, the natural cold or cool bath is cold water, either salt or fresh, in its natural state; and the artificial is that which is rendered colder by the addition of ice, common salt, alum, nitre, or sal ammoniac. And the natural hot or warm bath is water as it flows in that state from the bowels of the earth, as those of Bath and Bristol, which are call-

ed hot; and those of Buxton and Matlock, which are warm or tepid; and the artificial is that which is heated to any degree of heat or warmth we please.

Besides the above division of baths, there are various other kinds used in some parts of the world, which go under the name, such as,

1. The vapour or sweating-bath, made with the steams of hot water or other fluids. This does not differ essentially, in its effects, from the hot or warm, unless it be accompanied or followed immediately by plunging into cold water or snow, as practised by the hardy Russians.

2. The dry-bath; which is of two kinds: one consists in confining the patient in a bagnio, or a hot room, till a profuse sweating breaks forth: the other, in applying hot ashes, salt, sand, or other similar substances, till a like effect takes place.

3. The medicated-bath; which is water impregnated with metallic or medicinal substances, according to the nature of the constitution, or of the disorder it is intended to prevent or cure. This may, also, be either natural or artificial; of the former kind, are mineral waters, which are so often used for bathing, as well as drinking: and of the latter, is water in which any substance is dissolved or infused for the purpose.

To which may now be added,

4. The aërial or air bath: this consists in exposing the body naked, or thinly clad, to a dry, cool, or even cold air; from which, agreeable and salutary effects, somewhat similar to those produced from the cold water bath, have sometimes been experienced. And lastly,

5. The earth-bath: in which the patient is en-

veloped in fresh earth: by which relief has been contemplated in scorbutic and phthisical cases.

From which it will appear, that the term bathing or bath comprehends a variety of divisions: to treat of all which separately, would lead me beyond the bounds of this work. I shall, therefore, confine myself to the two first-mentioned general classes, cold or cool bathing, and hot or warm bathing.

Section 1. *Cold or Cool Bathing.*

The bath is called cold, when the mercury, in Fahrenheit's thermometer, stands between 33 and 56 degrees; and cool, when between 56 and 76: which distinction it may be necessary to keep in view, when it is applied as a remedy for the cure of diseases; but when it is resorted to merely as a dietetic or preventive means, it will not be so essential. I shall, therefore, speak of it under one general head.

Cold bathing is generally best adapted for hot seasons and climates. By its sudden shock, it quickens the circulation of the blood, invigorates the muscular and nervous systems, and braces the whole constitution: hence, it is, in hot climates and seasons, necessary and well adapted for the weak, infirm, and relaxed of every age and description; and peculiarly so for persons of studious lives, and sedentary employments.

It greatly increases the natural bloom and vivacity of infants; and, by strengthening their whole bodies, it helps them through the restless and painful period of dentition. By the same effect, it is no less useful in preventing, and even in curing the rickets: it is, indeed, so effectual a preventive or remedy for that disorder, that it is to be doubted, whether

many children, if inured to it in early life, with proper diet, country air, and exercise, would ever be affected with it. In confirmation of which, it is observed, that where it is a common practice to immerse or bathe children daily in cold water, soon after birth, the rickets are scarcely known. It is, likewise, perhaps, one of the best substitutes for pure air, for persons of every age in cities and other confined or crowded places, where there are not a free ventilation and sufficient exercise used.

The diseases in which cold bathing is recommended, are many and various; and, without enumerating them all, it will be sufficient to say, that it has been found useful in preventing and curing the following: convulsions, cutaneous eruptions, scrophula or kings-evil, palsy, some cases of rheumatism, tetanus or locked-jaw, atrophy, St. Vitus's dance, epilepsy or falling sickness, and head-ach; and in most other disorders depending on debility, or returning periodically.

It ought, however, to be remembered, that, like other remedies, it is not adapted to every case and disorder; but that, in like manner, it deserves, sometimes, if not judiciously prescribed, to be ranked among the lædentia, (hurtful) and, therefore, it may require prudence in its use. In most or all cases of debility, or relaxation in the system, unattended with any inflammatory affection, or obstruction of the abdominal viscera, it may generally be safely and successfully used; but in people of rigid fibres, and more especially, if a tuberculous, or inflammatory state of the lungs or viscera; or, if an obstinate obstruction of the bowels be present, it will not be advisable, and may be highly injurious, and even dangerous.

It has, nevertheless, in some instances of colic,

or fixed constipation of the intestines, been found to procure a passage through them, being dashed on the abdomen or lower extremities, after the other usual and powerful remedies had failed.

In cases of habitual costiveness, owing to a profuse perspiration, whether kept up by wearing flannel, hard labour, or otherwise, we may safely recommend general cold bathing as an effectual remedy.

It is, also, after the body is accustomed to it, under prudent management, the most effectual means to guard against taking cold.

There may be some choice in the kind or quality of the water, the time of day, and the method of using it.

Pure clean water is always to be preferred to that which is putrid, or has been long stagnant.

If used by affusion, or the shower-bath, it may be taken directly from the fountain; but, when by immersion, it should stand awhile first.

The time of day is a matter of indifference, provided the body be not in a state of free perspiration when it is used. It may not, however, be best immediately after dinner, till that meal be, at least in part, digested. It will, therefore, be safest, in the general, to defer it till late in the afternoon, especially if we bathe in a fresh river, or in the sea, when the chill will be somewhat taken off.

Immersion is preferable, when it is intended to produce a sudden and general shock; and it is thought safest to wet the head first; or to plunge in with it foremost.

The body ought to be rubbed smartly with flannel, immediately after coming out of the bath, till it be dry; and it will always be safest to use some moderate exercise at the same time.

If, however, under the preceding management, the patient remains cold and numb, it may not be best to repeat it, but to substitute the warm or tepid bath in its stead.

A late writer on the subject thinks it not only innocent but advisable, to use some gentle exercise before bathing, for his reasons for which, I insert his own words:

"In the earlier stages of exercise, before profuse perspiration has dissipated the heat, and fatigue debilitated the living power, nothing is more safe, according to my experience, than the cold bath. This is so true, that I have, for some years, constantly directed infirm persons to use such a degree of exercise, before immersion, as may produce some increased action of the vascular system, with some increase of heat, and thus secure a force of reaction under the shock, which, otherwise, might not always take place. The popular opinion, that it is safest to go perfectly cool into the water, is founded on erroneous notions, and sometimes productive of injurious consequences. Thus, persons, heated and beginning to perspire, often think it necessary to wait on the edge of the bath, until they are perfectly cool, and then, plunging into the water, feel a sudden chilness that is alarming and dangerous. In such cases, the injury is generally imputed to going into the water too warm, whereas, in truth, it arises from going in too cold.

"But, though it be perfectly safe to go into the cold bath in the earlier stages of exercise, nothing is more dangerous than this practice, after exercise has produced profuse perspiration, and terminated in languor and fatigue; because, in such circumstances, the heat is not only sinking rapidly, but the system parts more easily with the portion that remains." *Currie.*

Besides the advantages of general cold bathing, in which view, I have hitherto principally considered it, its partial or local use is no less salutary, when properly applied, in certain cases: such as weakness, or inability in any part; in some kinds of head-ach and tooth-ach; and in securing the head against taking cold.

Persons who are subject to the quinsey, and to periodical sore throats, will, instead of keeping their necks always muffled, find an advantage in bathing their heads and necks two or three times a-day in fresh spring water.

Bathing in the sea, or in salt water, is supposed to possess some peculiar and superior advantages over that in fresh; but, as the effects of bathing, in preserving health and preventing diseases, depend principally on the pure elemental fluid, I shall not allot a distinct consideration on sea-bathing.

Section 2. *Hot or Warm Bathing.*

It is called the warm or tepid bath, when the mercury stands between 76 and 98; and the hot, when it rises from the last degree to 120, or upwards.

For the reason mentioned in the preceding Section, of comprising the cold and cool bath under one general head, I likewise in this, use the terms hot and warm as synonimous.

In a prophylactic point of view, the warm bath is, perhaps, not less salutary than the cold, if rightly used. This is the kind of bath that appears to have been in so common use among the ancients, and which I mentioned in the general account of bathing. It was afterwards, in some places, much

neglected, and almost altogether superseded by the cold kind. This has, at length, given way to the warm, which is again becoming the most common and fashionable, both in preventing and curing diseases.

Warm bathing opens the cutaneous pores, relaxes spasm and rigidity, and conveys the most pleasant sensations to a person after great fatigue and violent exertions of any kind, whether of body or mind: hence, it was so often resorted to by the ancients as a pleasurable or luxurious resource, after weariness or intemperance of every kind.

From its powerful effects in promoting perspiration, and in relaxing spasm and rigidity of the muscular fibres, it has been found one of the most effectual preventives and remedies in all cases of obstructed perspiration; and in diseases attended with, or supported by, spasmodic constriction of any part of the body: such as colic, epilepsy, &c.

It is this kind of bathing, also, that is peculiarly adapted for promoting cleanliness; and, consequently, for preventing and curing all diseases occasioned by nastiness, and an obstruction of the cuticular excretions; with which many children, in particular, are often afflicted, for want of early and due attention to this important part of decency, as well as of health.

As the cold bath is generally best adapted for hot climates and seasons; so, on the contrary, is the hot or tepid bath for the opposite; with this caution, not to expose the body, soon after, to cold damp air. For persons who use the warm bath, in cold climates and seasons, flannel is, by all means, the most proper clothing next the skin; and, likewise, for such as use the cold bath, especially in cold weather.

Though the hot bath, when heated to 110 degrees, or upwards, has a relaxing and debilitating effect on most people; and is, therefore, improper for feeble persons to use frequently; yet the tepid, not exceeding 96, has an animating and invigorating effect on some; and has been found particularly serviceable in a dry, parched state of the skin; and in preventing attacks of diseases of the hysteric, hypochondriac, and paralytic kind, as well as in curing them after they have actually come on.

As in the administration of medicines, it is sometimes difficult to point out clearly the cases in which stimulants, and those, in which remedies of a different nature are most applicable; and the extent to which they are to be respectively used; so, it may, sometimes, be difficult to say, whether cold or warm bathing is most properly indicated; and whether one ought not occasionally to succeed the other. In such cases, it will always be most advisable to consult an experienced physician, before either is used; though it must be confessed, that practitioners have hitherto been too inattentive, and too much divided in their opinions in discriminating those states and disorders of the body, in which one kind of bath ought to be used in preference to the other.

The subject is, therefore, recommended to the attention and observance of physicians to point out more particularly, both the states of body and diseases, in which they ought to be respectively used and preferred.

CHAPTER II.

CLEANLINESS.

CLEANLINESS is now so universally acknowledged to be necessary in preserving health and preventing diseases, that almost every housewife, as well as physician, judges it indispensably necessary to enjoin it.

Some ancient authors have not failed to recommend cleanliness; but it is to the moderns more especially, that we are indebted for a just and forcible injunction of this particular, both in the prevention and cure of diseases.

Cleanliness is so essentially necessary to preserve health, that no person can be supposed to enjoy it long, or to be out of danger of being deprived of it, who does not observe and practise it. It is now ranked among the most certain preventives of the scurvy.

It is so well known, that it needs not to be described. It consists principally in three particulars, 1. In our persons; 2. In our clothes; 3. In and about our houses and furniture.

1. It is so agreeable and requisite to keep the skin clean, that no person of common decency will neglect to wash his face and hands every morning soon after rising, and again at evening before retiring to rest; and oftener in the day, when they are sweaty, or occasion requires it. Every person ought, moreover, to bathe or wash the body all over once or twice a-week, especially in hot climates, and in warm weather. Bathing, or washing, not only removes the sordes and impurities which naturally collect on the surface of the body, but it tends to promote perspiration, on a free and regular state of which, health greatly depends.

The feet perspiring more than the other parts of the body, ought to be washed twice or thrice a week: and it is very useful and refreshing for pedestrians to do it every night before going to bed. Cold water, fresh from the fountain, may, at all seasons of the year, be safely used for this purpose, by persons in health; and will enable the feet to bear cold much better, than bathing them in that which is warm. In confirmation of the safety and use of which, it has been observed, that some persons subject to cold feet, have, in the winter season, been in the practice of running out into the snow bare-foot, with impunity and success.

It may not, however, be safe or best, when cold water or snow is used, to suffer the feet to remain long in either of them; but they should, immediately afterwards, be briskly rubbed with flannel till they are dry.

I need hardly add, that when water alone is not found sufficient to keep the skin clean, the addition of soap, or of some alkaline or absorbent substance, becomes necessary.

The eyes ought to be washed well every morning with fresh cold water.* The mouth should, also, be rinsed, not only as often, but after every meal; and the throat should, likewise, be gargled, and a little water swallowed in the morning. In winter, however, when the water is very cold, the chill may be a little taken off for the above purposes.

When washing or rinsing the mouth, shall be found insufficient to keep the teeth clean, and to prevent that tartareous incrustation which naturally collects on them, they should be rubbed with a thick lather of castile soap, or with some simple

* No distinct consideration appears to have been allotted, in the course of this work, to the preservation of the eyes, owing to its not coming under any particular chapter or head of it; but, from the importance of the subject, I cannot well omit adding a few general directions in a note.

From the tenderness and delicacy of these organs, every person's experience teaches him, that they should always be preserved inviolate, and as clear from every irritating cause, as possible. This care is not only necessary for people generally, but especially for such as have weak and disordered eyes. These should carefully attend to, and avoid the following particulars.

1. All sudden changes from darkness to light, and the contrary, as much as possible. 2. Looking minutely at objects, either at dawn or twilight, and in dark places. 3. Sitting near a lucid lamp or candle, and facing a hot fire. 4. Reading or sewing much by artificial lights of any kind. 5. All dazzling and glaring sunshine, especially when it reflects on snow, or other light-coloured bodies. 6. Dust, smoke, and vapours of every kind, which excite pain or uneasiness. 7. Rubbing or fretting them in any manner, and wiping them with cotton handkerchiefs. 8. Much exposure to cold northwest or easterly winds. 9. All spirituous and heating liquors, which operate as poison on inflamed eyes.

Some living in cities who have weak and inflamed eyes, find permanent relief only by a change of air to that of the country.

Persons of the above description, will find an advantage in wearing some defence before their eyes, especially when exposed to heat, sunshine, or glaring lights. This will be best, if of a green colour. Spectacles of the same hue, are well suited for this purpose.

The ears, also, occasionally require attention in preserving the important sense of hearing; but most of the means are too obvious to need mentioning.

and innocent dentifrice, such as a powder of the burnt crust of bread; of chalk; or a mixture of cream of tartar and red Peruvian bark; to either of which a little of the levigated powder of brick dust, or pumice stone, may be added. Soot, snuff, tobacco-ashes, and a mixture of burnt alum and refined sugar, are also used by some; and of late, powdered charcoal has become a popular medicine for this purpose.

A solution of barilla or sal sodæ in water, is, in a foulness of the mouth and throat from whatever cause, an excellent gargle, detergent, and preservative of the teeth, as well as corrector of fetid breath; for which last purpose, a little of it may be occasionally swallowed.

All strong acid and alkaline substances, which form the basis of most patent or advertised tooth powders and pastes, are highly injurious to the teeth, and ought to be avoided.

The best tooth brush is a finger, a piece of spunge, or of coarse cotton cloth. A sage leaf is used by some for the same purpose. All metallic substances are improper for tooth-picks, which ought rather to be made of ivory, wood, or quills.

The mouth and teeth being kept clean, tends not only to prevent the teeth from rotting, but to preserve the breath pure and sweet.

All kinds of drink and food, either in a hot, or very cold state, are prejudicial to the teeth.

It deserves, also, to be mentioned, that a foul stomach, and a feeble, impaired digestion, sometimes, occasion an accumulation of sordes or tartar about the teeth; and full suppers of flesh, or of hard indigestible food, have been observed to have the same effect. The means of relief, in those cases, are too obvious to need pointing out.

People of a scorbutic habit, and subject to loose teeth and bleeding gums, should be more particularly careful to keep their mouths clean, and to live on a cooling, laxative diet; and make beer, cider, or tart wines, their common drink. Such will, also, find a great advantage in drinking freely of wort, or infusions of malt; with the plentiful use of antiscorbutic vegetables, such as horseradish, scurvy-grass, and water-cresses. The German preparation of cabbage, called sour crout, is also useful in such cases.

All persons who wish to preserve their teeth, ought to begin in early life, and strictly to observe the preceding directions; for, when one becomes carious, it not only taints the breath with a disagreeable odour, but tends to rot the others.

They should, also, carefully avoid biting off threads, cracking nuts, and the like; which may both injure the enamel or outside covering of the teeth, and loosen their roots.

Many people's teeth are greatly injured, and even spoiled, by the improper and imprudent use of mercury; which, also, often renders the breath fetid. Here, the diet above mentioned, with the frequent use of laxatives and sulphur, must be persevered in for some length of time.

It is owing, I apprehend, in great measure, to the moist state of the mouth, and to the diluent nature of the saliva, more than to any preserving quality in tobacco, that the chewers of that article think their teeth are preserved from rotting. And there is not only reason to suspect, but experience proves, that the hot smoke of tobacco, drawn through short pipes or segars, is frequently injurious to the teeth. The effects of foul pipes, in tainting the breath, as well as in colouring and cankering the

teeth; and, sometimes, in ulcerating the gums, are now too well known to all who use this article in that way.

The nose ought not to be neglected, but should be cleaned, at least every morning; which care is more particularly necessary in children.

2. Bathing and washing, how frequently soever employed, are insufficient to keep the skin clean and perspirable, without washing and renewing our clothes. This process, is a branch of housewifery; but, when they are prepared, we are highly culpable, if we do not change our shirts, drawers, and stockings, once or twice a week; and oftener, when our employments and cuticular excretions require it. Our clothes next the skin being often renewed and kept clean, supplies, in great measure, the place of frequent bathing, and is the best substitute for it.

I have heretofore shown the superior salubrity of flannel as an article of clothing; and I may now add its greater cleanliness; for, by absorbing the sweat and perspirable matter, it leaves the skin dry and clean.

In persons infected with putrid, pestilential, or contagious diseases; and in seasons and places, where those disorders prevail, all clothes, both of the body and bed, ought to be still more frequently changed than at other times. Well people ought not to wear the clothes, nor to sleep in the beds of sick persons, labouring under diseases of the kind lately mentioned.

3. Cleanliness in and about our houses and furniture, as well as in our persons and clothes, is necessary for the preservation of health. The first particular relative to houses, is their situation, which ought always to be dry and airy.

The site for a dwelling-house should be chosen in a chalky or gravelly soil; and on an eminence, from the summit of which, there is a gradual descent every way. Houses built in confined, low, or damp places; or, in the vicinity of marshes, or of stagnant waters, are generally unhealthy. It remains to be a contested point, what houses are the most conducive to health. The general opinion is, that wooden buildings are more so, than those built of stones or bricks.

Houses built in the situation that I have recommended, may be more easily kept clean than others. They will not easily give place for puddles to collect and stand about them; which should, in all places, be carefully avoided by those who wish to preserve their health, there being reason to apprehend, that the causes of violent, and even mortal diseases, have, sometimes, in hot seasons, been engendered about our habitations. All offensive animal and vegetable substances, and whatever is capable of putrefaction, ought not to be suffered to remain in or about our houses, but should be expeditiously removed to some distance, and buried under ground. Cemeteries should always be avoided in populous places, and near dwelling-houses.

The pits of privies, should, particularly in hot weather, be frequently strewed with layers of fresh earth and quick-lime. The situation of buildings of this kind over a stream of running water, is preferable to all others.

It would lead me beyond my present bounds to describe particularly the situation and planning of houses, which ought to be observed in the foundation and building of cities, though I think the subject highly deserves attention, and ought to be early observed in such undertakings.

Not only the floors of houses should be kept clean by frequent scrubbing, or sweeping and washing, but the walls ought to be often white-washed with fresh lime, which tends to keep rooms pure and sweet, and to prevent the accumulation of those noxious or morbid effluvia, which are supposed to occasion diseases. White-washed walls are more sweet and cleanly, and, unquestionably, more healthy, than papered ones, the latter being more apt to imbibe and retain impurities, than the former.

All furniture in a house ought to be kept clean and sweet, to which painting, on soft wood, greatly contributes; but the odour of newly painted rooms and furniture is to be avoided as unwholesome. Likewise, all utensils used in cookery, and about our houses and tables, should be kept pure and cleanly; which falling under the province of the housewise, I need not particularly describe or give directions for; but I may add, that all copper and brass vessels ought to be frequently scoured and kept bright and clean, they being, above all others, most apt to become tarnished or corroded by the acid and saline substances contained in them, or by the air, forming on their surface a cupreous or eruginous matter, which, has, in some instances, been known to occasion colics, and other complaints of the bowels.

The common earthen-ware, glazed with lead, is, also liable to be eroded by acid liquors; and may thereby become the source of the same obstinate and painful disorders; that metal, as well as copper, being found, when dissolved by acids, to be very deleterious. Tin, on chymical analysis, yields a considerable portion of arsenic; and is, therefore, by some, discommended for common use.

CHAPTER III.

VENTILATION.

VENTILATION, or a free circulation of air, is essentially necessary, both in preserving and restoring health: indeed, so much so, that no person can be supposed to enjoy health long, or to be out of danger of suffering in his health, who is deprived of it, for any considerable length of time.

It is in cities and towns, and in other confined places, where ventilation becomes more particularly necessary, to be attended to. Houses should, therefore, be placed in situations which admit of a fresh access of air on every side. They should be so constructed, that the doors and windows on different sides may be placed opposite to each other, or as nearly so as possible, in order that a fresh current of air may, at all times, be admitted to pass through them.

The doors and windows of all rooms that are constantly occupied, or slept in, ought to be daily opened; and those, the air of which has been contaminated by any means, such as, by many persons respiring in them; by many candles or lamps

burning; by heated fires or stoves; or, by the burning of charcoal, ought to be well ventilated and purified before they are inhabited or slept in; for neglect of attention to this, has been productive of sudden bad consequences; and, in some instances, of even death itself.

In hospitals, gaols, and ships; and in rooms where people are sick of putrid, contagious, or pestilential diseases, ventilation ought to be observed and practised with vigilant attention; and every means should be used to render and preserve the air sweet, pure, and wholesome. In those places, ventilators ought to be frequently used, especially when they are much crowded with people, and the air in them is greatly vitiated. A room may have the air in it considerably purified by pumping it; that is, by moving the door briskly backward and forward for some time, and by opening a window in the apartment opposite to it.

The air in infected and pestilential places, may be partly corrected and purified by vegetables in a growing state; and by various kinds of them, such as tansy, wormwood, rue, and mint, being collected and spread in a fresh state in them; and by fumigating with juniper-berries and the steams of vinegar: by which means, the air is not only sweetened and rendered more agreeable, but malignant and infectious disorders have been thought to be warded off.

To the want of due attention to cleanliness and ventilation, is to be imputed the most general cause of typhus fevers, so frequent at the present day.

CHAPTER IV.

MEDICAL ELECTRICITY.

ELECTRICITY being one of the most powerful stimulants, its effects may be considered both as general and local. It promotes a free circulation of the blood, and increases animal heat and perspiration, as well as all the secretions and excretions of the body. It has been frequently used, of late, both as a preventive and cure of many diseases. Without enumerating them all, it will be sufficient to say, that it has been found most successful in the following: rheumatism, gout, kings-evil, palsy, St. Anthony's fire, St. Vitus's dance, epilepsy or falling sickness, gutta serena, nervous head-ach, tooth-ach, suppression of the menses, contractions and cramps of the limbs, and in various obstructions, tumours, and ulcers.

And it has, also, been found one of the most effectual means of resuscitating persons apparently dead from drowning, suffocation, and other like causes.

PART II.

OBSERVATIONS ON THE ABUSE OE MEDICINE.

THERE is another subject, not included under the preceding heads, which is of sufficient importance to claim attention; and may not improperly be said to come under the general object of this work: I mean "The abuse of medicine."

Many physicians have written on the use of medicine, but few on the abuse of it; though the latter is within their proper province, as well as the former. For it must be acknowledged by every candid and honest practitioner, that the intent and use of medicine are not only often lost by an injudicious and untimely administration, but that, by that means, they sometimes lay the foundation of, and occasion diseases.

Without entering minutely into the subject, which would require a considerable treatise, I shall only, at present, touch upon some of the most common and flagrant particulars.

And, in the first place, although I judge it advisable, and would recommend an early application for medical advice, yet, I by no means, think it necessary and best for all persons, in every slight complaint, to be taking strong and powerful medicines; but that, in common colds and slight indispositions, it will be sufficient to take a timely care

in avoiding all exposure and irregularity of the nonnaturals, which have been already pointed out: and, if there should not be an abatement of the most urgent symptoms, then to use some of the means or remedies heretofore mentioned, as the nature of the case may require: and, if afterwards, there shall be no change for the better, but an increase of the symptoms, it will then be advisable to consult a physician; who, instead of prescribing immediately active and powerful medicines, will often find, that the end may be answered by some of a mild and innocent kind, and such as would, perhaps, be still within the knowledge or reach of the patient.

By such a careful and prudent procedure, I am persuaded, that not only many disorders might be prevented from settling on the constitution, but that much injury might often be avoided by shunning medicine of a strong and powerful kind.

The superiority of modern practice appears in nothing more conspicuous, than in a simplicity and paucity of medicines, divested of that compound form of prescription, which characterized the ancient.

Some medicines have not improperly been called edge tools, or compared to them; which being rightly understood and used in the hands of skilful workmen, are very useful and necessary; but, when misused, are often productive of bad consequences.

The abuse of the innumerable patent and quack medicines, is a subject too important and well known to need pointing out: and whether legislative authority will ever interfere in suppressing this growing evil, it is hoped, that philanthropic physicians will endeavour to discourage and prevent this frequent source of disease.

To enumerate all medicines that might be abused, would extend to a great part of the materia medica; for some are salutary or deleterious, according to the manner or quantity in which they are used. I shall, therefore, confine myself to a few which are most commonly the subjects of abuse.

These are, mercury; opium; strong emetics and cathartics; bitters, astringents, aromatics, and stimulants; to which may be added, the remedy of blood-letting.

CHAPTER I.

MERCURY.

MERCURY, although one of the most powerful, and, under prudent management, useful medicines, yet must be acknowledged to be often productive of very serious and injurious effects. Its various preparations are too numerous to be particularized here; but I cannot avoid giving it as my opinion, that the preparation, called corrosive sublimate, is too active, and frequently deleterious, to be ventured upon internally, except in the most obstinate disorders, and under the immediate care of an experienced physician.

In all cases in which mercury is administered, the patients and nurses should be advertised of it, and directed to avoid exposure to cold damp air, and to use warm mucilaginous drinks. The food should be thin, light, and rather warm than cold. Salt and all acids, by which its activity and virulence are increased, should be carefully shunned; for it has been observed, that the mildest prepara-

tions of it, when not conducted agreeable to the preceding regimen, have, sometimes, produced very sudden and pernicious effects: indeed, it is one of those remedies which may give the enemies of medicine some grounds to question, whether mankind have been most benefited or injured by the medical art.

Modern practice judges it rarely necessary to administer mercury to the extent of full salivation; experience having shown, that most or all of the effects expected from it, may be obtained by a more sparing and long-continued use, than is sufficient to excite a copious discharge of saliva or spittle. When, however, a complete salivation takes place, either by accident or design, and it becomes necessary to stop it, the patient ought, not only to observe strictly the dietetic regimen mentioned, but he should frequently take some perspiring and laxative medicines, with the liberal use of sulphur, which has been thought to have an effect in checking the operation of mercury.

Blisters are, also, effectual in stopping a ptyalism or salivation. And a flannel shirt is, at all times, both advisable and necessary during the free use of mercury, especially in cold climates and seasons.

When corrosive sublimate has been taken by mistake, or to excess, the antidote is some fixed alkali, such as ley of tartar, salt of tartar, or salt of wormwood; with the plentiful use of mucilaginous drinks, and oily medicines.

I have already remarked, that the saliva is essentially necessary to the digestion, concoction, and assimilation of the food: therefore, a copious and long-continued discharge of that fluid must impair

the digestive faculty, and thereby weaken the constitution.

Arthritic and rheumatic complaints, with a tender susceptibility of taking cold, are among the consequences of a mercurial course, or salivation.

Consumption, spitting of blood, and various disorders of the bowels, have, sometimes, been observed to follow its liberal or imprudent use.

The destruction of the teeth, and fetid breath, are effects too well known to need mentioning.

Its external application, both in the form of unguent and lotion of sublimate, has moreover, at times, been productive of unexpected and disagreeable consequences.

I do not mean to be understood, that I think mercury is an useless medicine, or of so dangerous a nature that it is never to be administered; for I know it to be a very useful one, and such as may sometimes, be innocently and successfully given, with care, in the cure of various disorders, to point out which is not my present province; but I wish to caution people against a too free and indiscriminate use of it for almost every complaint, as is the practice of some; and that, whenever it is given repeatedly, or in any considerable quantity, it ought to be under the prescription and immediate notice of a prudent and skilful physician.

I trust that I am not alone in judging of the fearful and injurious effects of mercury, when imprudently administered; and that there are many contemporary practitioners, who will join me in it. And I find, that several authors have written on the subject, in order to apprize physicians and the public of it. The authority of one of them, Dr. Leake, may be sufficient on the present occasion.

" Mercury may injure the constitution, either by its quantity or quality. By its quantity, it will preternaturally increase the blood's motion; and, by overloading the vessels of the lungs, or softer viscera, has frequently occasioned spitting of blood, hectic fever, and other consumptive symptoms.

" The quality of mercury is not less pernicious to the constitution, than its immoderate quantity, especially when adulterated. I knew a young gentleman, not nineteen years of age, attacked with a violent fit of gout, soon after a salivation, of which it was evidently the exciting, if not the proximate cause; as he had not before been subject to the least symptom of any such malady.

" Without disregarding the testimony of truth, it cannot be denied, that this remedy is often attended with consequences, not only dangerous, but fatal, where the lungs are tender, or any of the delicate, internal parts in a state of decay.

" Salivation, or the immoderate use of mercury, by enlarging the secretions, and the excessive waste of animal fluids, will dispose the body to universal relaxation, and produce many chronic diseases, particularly, spitting of blood, consumption, and dropsy.

" The pernicious quality of mercury, in the form of corrosive sublimate, is too manifest to need illustration. I have seen two instances of a salivation brought on by the external use of sublimate, applied as a lotion; and one, where the same accident happened, by the application of red precipitate of mercury to an ulcerous sore.

" In a word, the immoderate use of mercury has been observed from repeated experience, greatly to injure the brain and nerves, as well as the stomach

and bowels depending upon their influence; and thus, by weakening the animal system, subjects the patient to gout, debility, nervous disorders, loss of memory, confusion of ideas, low spirits, and premature old age."* *Leake.*

* I have not ranked arsenic among the subjects of abuse; but, from its increasing internal use of late in practice under the name of the tasteless ague drop, and from the numerous instances of its being taken to excess, both by accident and design, it may not be wholly improper or unacceptable to some readers to add a few observations on it.

It is well known, that arsenic has been found to be one of the most effectual medicines in certain cases of agues and intermittent fevers, in which the usual means have proved abortive; but, although in those diseases, it may be the most certain remedy, yet there is reason to apprehend, that virulent, and even fatal effects have sometimes followed its use, even under the idea of a medicine: wherefore, I think it behoves all to be careful how they take it inwardly, and then only under the direction and notice of a prudent physician.

When a large quantity of arsenic has been lately swallowed, the first step is to give a scruple or half a drachm of white vitriol, which generally operates as a more easy and speedy emetic than any other.

The next is, (not waiting for the operation of the puke to be fully over, as there is no time to be lost,) to give plentifully either of liver of sulphur dissolved in pure water, or a strong watery solution of castile or white soap; or, these may, perhaps, with a greater prospect of success, be alternated with each other.

Copious draughts of mucilaginous drinks, with plenty of milk and oily medicines, are to be immediately administered, both by the mouth and injections, and faithfully persevered in till the symptoms abate.

If the quantity of arsenic taken be small, and its effects have already extended to the lower part of the bowels, the vomit may be omitted.

CHAPTER II.

OPIUM.

EVERY physician's experience must have taught him, that opium, as well as mercury, is a medicine which has been often abused. And I shall not point out all the diseases in which it may be beneficial, nor those in which it may be detrimental; but only in a general way, in order that my readers may be acquainted, that, by improper use, it deserves to be ranked among the lædentia, or medicines which are hurtful.

Opium is, perhaps, one of the most useful and powerful medicines in the whole materia medica; and, without which, it would be difficult to give that soothing relief in many disorders, which we are enabled to do with it; but, with this, as with many other things, we have not contented ourselves with the proper or moderate, but have run into the improper and excessive use of: and although it was at first used, and still ought to be, principally as a medicine, yet we find, that a great part of the injury arising from it, is owing to its

habitual use; for, like tobacco and spirituous liquors, which may be disagreeable at first, it becomes, by use, not only agreeable, but desirable, both in its taste and effects: hence, persons who have occasion to take it frequently, or who have been long in the practice, ought to be sparing in quantity, and should not continue it longer than is essentially necessary; for it is found, that by long-continued use, it is not only necessary to increase the dose to several times the first quantity, but it becomes very difficult for the patient to keep comfortable, or seemingly to subsist without it.

Its constant and liberal use rarely fails to pall the appetite, and destroy digestion; to induce costiveness, general debility, tremors, and palsy. In short, it is followed by much the same train of symptoms and disorders, as spirituous liquors.

It is not within my present plan to inquire in what part of opium its virtues reside, nor to explain its mode of operation, further than to say, that from its evident effects, it appears to operate at first as a sudden and diffusive stimulus, and principally on the nervous system; that this stimulating and exhilarating effect is soon and certainly succeeded by languor, inactivity, and sleep; which are afterwards followed by a torpid coldness and sweat; and, if the quantity taken be excessive, by giddiness, head-ach, nausea, sickness, vomiting, constipation of the bowels, slow intermittent pulse, convulsions, and, at length, death.

Medical history, as well as our own observation, furnishes us with abundant proof of the extent to which the use of opium may be carried by custom and habit; and that it is greatly used in some countries, not merely as a medicine, but as an exhilarating and intoxicating substance, like tobacco,

ardent spirits, &c.: and, although the latter use is not so common in this country, as in some others, yet it is to be feared, that the practice is gaining ground; and that it will be more used, like spirituous liquors, among us.

It may not, however, always be best for those who have been long addicted to the immoderate use of opium, to discontinue it suddenly, and all at once; but it will be safest to desist gradually; and to substitute some other things in its place, such as either a little wine or spirits; some aromatic or cordial substance; or some of the fetid gum pills; by which, the habit may be gradually, and, at length, finally broken, to the great relief and safety of the sufferer.

Among the various cases in which opium is abused, deserves to be mentioned as not the least common and flagrant, its liberal and long-continued use for sucking infants, that are often afflicted with restlessness and pains in their bowels. It is, no doubt, the most speedy and effectual, and appears, sometimes, to be the dernier remedy in many of those cases; but the experience of every physician and observing person must have taught them, that its excessive and constant use has, in certain instances, (and those too frequent,) produced effects, which have never afterwards been removed, and which have sorrowfully proved fatal.

Under the head of opium, I mean that article, not only in a solid form, but in its several preparations, such as laudanum, paregoric, &c.

When opium has been long used for children, and it seems difficult to dispense with it, various substitutes may be employed, such as the several carminative seeds of anise, dill, caraway, cardamom, coriander, fennel, angelica, and master-

wort: and, perhaps, sometimes, a little weak brandy punch, with the occasional interposition of some alkaline, or absorbent medicines, which will tend to neutralize and destroy the superabundant acidity in the first passages, and thereby to remove the most frequent cause of the complaint.

The best correctors of opium, when taken to excess, are acids of different kinds, particularly the vegetable.

Coffee has been found to counteract the morbid effects of opium and cicuta on the constitution; and may, therefore, be used liberally by those who take much of these medicines. This may be one reason, why the Turks, who are excessively fond of coffee, bear such large quantities of opium.

The diseases in which opium is most likely to be improperly administered, are those of an inflammatory nature, in which there are present, a plethory; a frequent, full, and hard pulse; dry skin; and a costive state of the bowels: in which cases, it will be necessary first to let blood, and prescribe laxative and cooling medicines, till the inflammatory symptoms are abated: after which, if pain and restlessness still remain, opium may then be safely and usefully given.

I wish not unnecessarily to alarm my readers, by arresting their attention to the abuse of a medicine, which is in so common and liberal use; but the public ought to be advertised of every well-known fact respecting the abuse, as well as the discovery and salutary use of a medicine.

"Opium is the most sovereign remedy in the materia medica, for easing pain and procuring sleep; and, also, the most certain antispasmodic yet known; but, like other powerful medicines, becomes highly noxious to the human constitution,

and even mortal, when improperly administered. Its liberal and long-continued use has been observed greatly to injure the brain and nerves, and to diminish their influence on the vital organs of the body. By its first effects, which are exhilarating, it excites a kind of temporary delirium, which dissipates and exhausts the spirits; and, by its subsequent narcotic power, occasions confusion of ideas, and loss of memory, attended with nausea, giddiness, head-ach, and constipation of the bowels: in a word, it seems to suspend, or diminish the natural secretions and excretions of the body, that of perspiration only excepted.

"Those who take opium to excess, become enervated and soon look old: when deprived of it, they are faint; and experience the languor and dejection of spirits common to such as drink spirituous liquors in excess: to the bad effects of which, it is similar; since, like those, they are not easily removed, without a repetition of the dose." *Leake.*

CHAPTER III.

STRONG EMETICS AND CATHARTICS.

EMETICS and cathartics are among the medicines most commonly used; and, when properly and carefully administered, are some of the most necessary and useful; but, when prescribed at improper times, and taken in immoderate doses, may be highly injurious; and have, in some instances, even proved fatal. Their frequent and repeated use tends to weaken the stomach and bowels, to impair digestion, and to induce costiveness.

It will not be my business here, more than on the preceding subjects, to point out all the cases in which medicines of these kinds are indicated; but I shall only mention some, in which they are most likely to prove hurtful. And first, of emetics: which are of various kinds; but those most commonly in use are the antimonial, which being the most active and powerful, require the greatest caution in their use.

I judge the practice, by no means, safe, to give a full dose of four or five grains of emetic tartar to every person who may take a puke; but I think

it more advisable and prudent, to give it in divided portions of about one quarter at a time, every half, or three quarters of an hour, till it has the desired effect: and, in this manner, I have rarely found it too severe; and I think it often has a better effect, than when given in a full dose at once.

Emetics may be administered at improper times, and in improper disorders, as well as in too large doses. They should not be given on a gorged or full stomach, nor in a constipated state of the bowels. The stronger kinds ought always to be given with caution to persons of weak, delicate, and nervous constitutions; also, to those of full, plethoric habits, and whose bowels may be supposed to be in a state of inflammation, or unsoundness; at least, not until after blood-letting, and the inflammatory symptoms have subsided. They should be wholly abstained from by persons subject to hemorrhages, or bleedings from the stomach, lungs, or nose; and by those disposed to apoplectic and convulsive fits.

The unnecessary and improper use of strong cathartics, is subject to much the same abuse as emetics; but the former are not often attended with so much immediate danger, as the latter. Many persons suffer greatly in their health, by getting in the habit of using strong purgative medicines; the necessity of which might, in great measure, be obviated by diet; and by attending to the means already mentioned under the head of Retentions and Excretions.

Many cases occur in which it becomes indispensably necessary to use some purgative or solutive medicines; but, it should always be observed, especially by persons who are under frequent necessity to take them, to prefer those that are the mild-

est and most innocent, and best adapted to the particular nature of the constitution and case: for instance, it would be very improper for persons of a cold, phlegmatic temperament, to use neutral salts, or purgatives of the saline kind; for they chill the blood, and render the body more torpid: and, on the contrary, it would be no less injurious for such as are of a warm, sanguine, or plethoric habit, to take those of the resinous or acrid kind, which stimulate the bowels, and inflame the constitution. The difference and choice of these will be understood by recurring to the place lately referred to.

Every physician, and patient afflicted with the hemorrhoids or piles, ought to know and remember, that aloes is the most improper purgative in that disorder, which, experience shows, is sometimes brought on by that medicine alone.

The necessity of purgative medicines may, in great measure, be supplied and superseded by the use of intestinal injections, which are not enough used in this country.

"Those of tender bowels, or weak nerves, suffer much from the violent agitation of emetics, which invert the natural expulsive motion of the intestinal canal, and occasion regurgitation of bile into the stomach, contrary to its natural course downwards, attended with nausea and intolerable sickness. To such, also, as are of full habits of body, or who have unsound viscera tending to inflammation, emetics are dangerous, and have, sometimes, proved fatal, by increasing inflammation, or bursting a blood-vessel.

"In general, it may be right to encourage those discharges which nature seems to have set on foot; but this rule is not without exception; for every

discharge is not critical or salutary; but, on the contrary, often morbid and spasmodic. It is too much the common practice to give an emetic, wherever symptoms of bile appear at the stomach, without duly regarding the cause of its redundance; which, for the most part, is a symptomatic, and not a primary affection; for, where bilious vomiting is present in cases of nephritic colic, inflammation of the stomach, plethoric disorders of the head, or a disposition to apoplexy, which not unfrequently happen; emetics will aggravate the disease, and render it more dangerous, or even mortal. Bleeding, plentiful dilution, and the warm bath, will be proper, and gentle laxatives, to carry off the offending bile by the intestines.

"By strong purgatives often repeated, the intestines are robbed of their mucus, and rendered tender, irritable, and subject to diarrhœa, and colic pains; especially after taking cold, errors in diet, or other accidental causes, which, in their natural, sound state, would have produced no such effects. Besides, by their long-continued use, the body is deprived of nourishment, and the blood so much empoverished, that many instances might be brought to prove, a dropsy, consumption, or other chronic diseases, were the consequence.

"From the habitual use of purgatives, as well as spirituous liquors, the bowels will lose their villous coat or fine nervous lining, so as to become half callous; and, at last, insensible to the gentle stimulus of bile, the purgative appointed by nature to quicken their motion: therefore, costiveness will be another bad consequence of their frequent use, which, like the abuse of opium, or spirituous liquors, oftener becomes necessary from bad habit, than any natural defect in the expulsive force of the alimentary tube." *Leake.*

CHAPTER IV.

BITTERS, ASTRINGENTS, AROMATICS, AND STIMULANTS.

ALTHOUGH bitters, astringents, aromatics, and stimulants are frequently indicated, and often become both necessary and useful, yet there is no doubt, that their end is often frustrated, and their intended effect lost; and that, by an improper and a too long-continued use, they may prove highly injurious, not only to the stomach and bowels, but to the whole constitution; for it is an established law of nature, that when any power or substance is frequently and repeatedly applied to the body, and becomes habitual, it loses its first, and is followed by an opposite effect. This is particularly exemplified in the nature and operation of medicine; and in none, perhaps, more than in those of the bitter, astringent, aromatic, and stimulant classes; which, when constantly used for any considerable length of time, rarely fail to be succeeded by a weakness of the stomach, and finally, by a debilitated state of the whole body; as I have remarked

of wine and ardent spirits; which, although of a stimulating and heating nature, are generally followed by coldness, flaccidity, and weakness.

It would extend beyond my present bounds to enumerate all the medicines of these several classes, and to point out all the cases in which they may be improperly used: I have, therefore, only touched the subject in a summary way, advising all who may have occasion to persist in the long-continued use of them, to consult experienced physicians; whom I would also request to observe carefully their operation and effect; and, I am persuaded, they will find, that those kinds of medicines may be frequently continued longer than is salutary, and may even prove injurious.

"All stimulating medicines act as sedatives; that is, they diminish the vital power of the body, when their first effect is over; as appears evident in opium, spirituous liquors, &c.: and stimulants, even when externally applied, as in blisters with cantharides, produce a similar change, and have been observed to occasion sleep, when other means failed.

"Bitters, astringents, and aromatics are all of the tonic kind; but practical experience clearly proves, that their liberal and long-continued use is highly pernicious; and that, thus administered, they defeat the very purpose intended; for, after a certain time, they diminish the energy of the stomach, and, at last, destroy the vital powers of the whole animal system.

"We have remarked, that stomachic bitters, and spirituous cordial medicines, to which the patient has generally recourse, are so far from being serviceable in such cases, that their frequent use has been found injurious in a high degree; for all stimulants,

by long continuance, counteract their own purpose, and produce atonic effects. By vellicating the coats of the stomach, they excite a canine or preternatural appetite, which craves a greater quantity of food than the stomach can digest or dispense with; so that, instead of being nourished, the patient will be oppressed with flatulence, palpitation of the heart, hectic heats, and such chronic diseases as are consequent of ill-prepared, crude chyle, viz. gout, dropsy, or scorbutic cachexy; for it should ever be remembered, that the body is not nourished in proportion to the quantity of food received into the stomach, but according to the degree of perfection with which it is digested.

"Moderate exercise in an open carriage, or on horse-back, in cool, dry, pure air, which, of all others, is most bracing; assisted by a strong infusion of peruvian bark, with mineral acids and steel; and afterwards the chalybeate waters of Islington, Tunbridge, or Spa; with the use of the flesh brush, and cold bath, when the viscera are sound, are the principal remedies to be depended upon for lasting relief, in primary atonic weakness of the stomach."

Leake.

CHAPTER V.

BLOOD-LETTING.

IN addition to the medicines already mentioned, as being frequently misused or abused, may be subjoined the remedy of blood-letting; which, notwithstanding its frequent use and practice, not only by the sick and disordered, but by many in almost perfect health, must be acknowledged, by the candid and observing physician, to be often unnecessary, and sometimes detrimental to the disorders and constitutions in which it is used.

It is of indisputable use in most, or all acute febrile diseases of an inflammatory nature, accompanied with giddiness, head-ach, a full, hard pulse, and acute pain. In which cases, it may be not only innocent, but sometimes necessary to repeat it, according to the nature of the disorder, and the urgency of the symptoms; but, in diseases of a different nature, unattended with any of the preceding symptoms; and in those called nervous and putrid, bleeding must be carefully avoided; and remedies should be employed that are of a tonic or strengthening nature.

Blood-letting is, also, sometimes necessary for persons in a moveable state of health, who are of a sanguineous temperament, and of plethoric habits; and who may labour under a turgescence of their blood-vessels, evidenced by a florid complexion, difficult respiration, and other symptoms of plenitude. It is, also, particularly necessary for persons of an apoplectic disposition; and no less so, for such as are subject to periodic pain and hemorrhages; the accustomed time of which ought to be preceded by blood-letting, or other remedies that may supply its place.

Some are in the habit of letting blood regularly once or twice a-year, whether indicated or not; but this practice is not only unnecessary, but sometimes injurious; especially to those of a pallid aspect, lax solids, weak nerves, and a feeble digestion: which generally occur in temperaments and constitutions opposite to those lately described as requiring it.

An additional reason for avoiding frequent blood-letting, is, that a repetition of it, ultimately increases, more than it lessens a plethory; for the constitution is found to be possessed of a surprising power of reproducing that vital fluid, whenever it is exhausted by accident or design.

The best substitutes for bleeding are, moderate exercise, a spare diet, and gentle laxatives; which, properly conducted, will often supply the place and defect of regular or habitual discharges of blood.

The necessity or occasion of full blood-letting may, also, be sometimes supplied by leeches, cupping, blisters, or other discharges by setons or issues. And flannel worn next to the skin, by keeping up a free perspiration, and circulation of

blood in the extreme vessels, tends to prevent the necessity of frequent bleeding.

"No remedy has been more abused than that of bleeding by the lancet, the preposterous use of which, therefore, deserves consideration; for blood being the fountain of life, the profuse or unseasonable discharge of it, will endanger the constitution by destroying that due balance which ought to subsist between the solids and fluids.

"In acute diseases, when blood is redundant, bleeding is a speedy and efficacious remedy; but, in chronic, as well as acute maladies of the putrid kind, when it offends rather in quality than quantity, the loss of blood is productive of great injury; particularly in those of lax solids, weak nerves, and bad digestion. But should it, for particular reasons, be sometimes thought necessary in such cases, the advantages proposed by it, may be more safely obtained by spare diet, moderate exercise, and gentle laxatives, which will gradually empty the vessels, with much less diminution of strength.

"The frequent and unseasonable loss of blood, in those of a spungy habit and pale aspect, weakens the circulating power, and diminishes the natural secretions and excretions. It impairs digestion, disposes the body to corpulency, dropsy, and nervous disorders, and even convulsions, where blood is discharged suddenly, and in great profusion.

"If the patient, after bleeding, is affected with languor, flying pains, oppression, or sleepiness, he has then been greatly injured by it; for, in such, the circulation languishes, perspiration is lessened, and the blood is not carried far enough through its vessels, to invigorate the system and support the natural secretions; hence, a load of gross humours will be accumulated, and a bloated habit of body

will ensue; especially in those who indulge in eating, and use not sufficient exercise to carry off the redundant fluids.

"On the contrary, those of strong solids, a costive habit, a hard, full pulse, attended with giddiness and head-ach, or other symptoms of plenitude, may lose blood, use low diet, and keep the body laxative, with great relief to the constitution, particularly at new and full moon, about the vernal or autumnal equinox; for, at that period, apoplexies, palsies, and other fatal diseases most frequently happen. But the indiscriminate loss of blood in spring and autumn, in such as are healthy, is a vulgar error, which has been injurious to many; since no alteration for the better can add to perfect health.

"In short, such as live temperately, use sufficient exercise, and perspire freely, will seldom have occasion to lose blood by the lancet, except in acute diseases, where the circulating power is preternaturally increased by pain, fever, or other violent causes." *Leake.*

THE END.

ERRATA.

Page 114, last line, for *fetid*, read "putrid."
124, 9th line, dele "in" in the word *indigestion.*
145, 1st line, for *of*, read "or."
168, 30th line, insert "visit" between the words *should warm.*
262, 19th line, for *housewise*, read "housewife."

A GLOSSARY OF THE TECHNICAL TERMS CONTAINED IN THE PRECEDING WORK.

A word being defined in one form or part of speech, it was judged unnecessary to explain the same in another.

ABDOMEN, the belly
Ablactation, weaning
Absorbent, destroying moisture or sourness
Accelerate, to quicken
Acescency, disposition to sourness
Acidity, sourness
Acidulate, to sour slightly
Acrimony, sharpness
Acute, of speedy termination
Adipose, fat
Affusion, pouring one thing on another
Alcohol, rectified spirit of wine
Alkali, a fixed salt fermenting with acids
Alkalescency, the opposite of acescency, tendency towards putrefaction
Alimentary, relating to nourishment
Alimentary canal or tube, the stomach and intestines
Alliaceæ, medicines of the garlic kind
Alvine, relating to the belly
Analysis, separation of a compound into its parts
Anodyne, easing pain
Anorexia, want of appetite
Antidote, a medicine to destroy poison

Antiscorbutic, good against the scurvy
Antiseptic, resisting putrefaction
Antispasmodic, against spasm
Anus, the fundament
Aperient, of an opening quality
Arthritic, gouty, relating to the joints
Assimilation, change into another nature or likeness
Astriction, the act of contracting
Astringent, binding
Athletic, strong
Atonic, debilitated
Atrabilarian, melancholic
Atrophy, a wasting without fever, or any sensible cause
Attenuate, to dilute, to thin
Azote, the base of nitric acid, principle of putrefaction
Bilious, Biliary, } relating to the gall
Bronchocele, a swelling on the wind-pipe, called, in England, the Derby-shire neck
Borachio, a leathern bottle
Bagnio, a house or place for bathing
Cacao, Cocoa, } the chocolate nut
Cachexy, a disordered habit of body
Cæteris paribus, other things being equal
Calcarious, like a calx, limy
Calcined, reduced to a powder by fire
Calculus, the stone or gravel
Cantharides, Spanish flies
Cardialgia, the heart-burn
Capillary, fine, hair-like
Carbonic, relating to carbon or charcoal
Catalepsy, a kind of apoplexy
Carious, rotten
Carminative, expelling wind, warm
Caseous, like cheese
Catarrh, a discharge from the head or throat
Cathartic, a purge
Catheter, a pipe to draw off the urine

Cellular, made up of cavities
Chalybeate, impregnated with steel or iron
Chlorosis, green sickness
Cholera morbus, a vomiting and purging
Chronic, Chronical, } slow, of long continuance
Chyle, the white alimentary fluid making the blood
Chylopoeitic viscera, the liver, spleen, sweetbread, and caul
Chymical, relating to chymistry, or to the art of combining and separating bodies
Coagulum, a curd
Concoction, digestion in the stomach
Condiment, seasoning, sauce
Confection, sweet-meat
Contagion, infection
Constipation, obstruction, costiveness
Contaminated, impure, corrupt
Convalescence, recovery from sickness
Coriaceous, like leather
Crasis, peculiar state of the blood in every person
Crisis, a critical time, or turn
Crudity, rawness, indigestion
Cupreous, coppery
Cutaneous, Cuticular, } relating to the skin
Defœdation, foulness
Deleterious, poisonous, deadly
Delirium, light-headedness
Dentifrice, a tooth-powder
Dentition, teething
Dephlogisticated, deprived of phlogiston, or the principle of inflammability
Dernier, last, only remaining
Diabetes, an immoderate flow of urine
Diarrhœa, a looseness, purging
Diaphoretic, sweating
Diascordium, a cordial medicine so called
Diathesis, disposition or habit of body

Dietetic, relating to diet or regimen
Drastic, powerful
Diuretic, promoting urine
Drupaceæ, stone-fruits
Duodenum, the first of the intestines
Dyspepsia, indigestion
E. G. for example
Effluvia, exhalations, vapours
Electric, relating to electricity
Emaciation, wasting of flesh
Emetic, a vomit
Empyreumatic, burnt
Emunctory, an outlet, or passage from the body
Enamel, the outside covering of the teeth
Enervate, to weaken
Endemic, Endemial, } peculiar to a country
Epidemic, Epidemical, } prevailing
Epilepsy, the falling sickness
Equilibrium, equal weight
Eructation, a belch
Eruginous, brassy, rusty
Erysipelas, St. Anthony's fire
Eudiometer, an instrument for measuring the purity of [the air
Exacerbation, the increase of a disease
Excretion, discharge of animal fluids or matters
Exonerate, to unload
Exotic, foreign
Exsiccate, to dry
Farinaceous, meally
Febrile, feverish
Fermentatæ, fermented liquors
Fistula in ano, a hollow ulcer in the fundament
Flatus, Flatulence, Flatulency, } wind in the bowels
Fluor albus, the whites
Fluxus cœliacus, a chylous or milky purging

Fœces, the excrements
Fœtus, an unborn child
Fossil, mineral
Gas, an elastic fluid, air
Gastric, digestive, relating to the stomach
Gland, a secretory organ
Glossary, an explanation of difficult words
Goitre, see bronchocele
Gutta serena, a kind of blindness
Gypsum, plaster of Paris
Hectic fever, generally ending in consumption
Hemorrhage, a discharge of blood
Hemorrhoids, the piles
Hepatic, relating to the liver
Heterogeneous, of unlike kind
Homogeneous, of the same nature
Hydrogen, inflammable air, principle of water
Hydrophobia, canine or dog madness
Hygieine, the art of preserving health, and preventing diseases
Hygieinists, physicians who attended people only in health, in order to preserve it, and prevent diseases
Hypochondriasis, hyp, spleen, vapours
Idiosyncrasy, peculiar habit or constitution
Iliac passion, an inverted motion of the intestines
Imbecility, debility, weakness
Immersion, plunging under water
Impetus, a blow, force
Imposthume, an abscess, gathering
Inanition, emptiness
Incrassate, to thicken
Indigenous, native to a country
Indigestible, difficult of digestion
Inebriety, Inebriation, } drunkenness
Infection, contagion
Inflammation, an increased heat and action of the blood-vessels
Ingesta, all solid food taken into the body
Inspissate, to thicken
In succum et sanguinem, into juice and blood

Intestinal, belonging to the intestines or guts
Irrespirable, unfit to be breathed
Irritability, a disposition to contract from a stimulus
Ischuria, a suppression of urine
Juvantia, useful remedies
Lacteals, vessels conveying chyle
Languor, want of strength or spirits
Laxative, relieving costiveness
Lædentia, hurtful remedies
Levigated, reduced to a fine powder
Lenitive, softening, laxative
Lotion, a medicinal wash
Manganese, a semimetal so called
Mania, insanity, madness
Mastication, act of chewing
Materia Medica, the whole collection of medicines
Mesentery, a membrane connecting the intestines
Menses, the courses
Menstruating, relating to the courses
Menstruum, a liquid used in infusion
Mephitic, suffocating, noxious
Meslin, a kind of bread made of wheat and rye
Meteorological, relating to meteors, or the air
Miasma, morbid exhalations or vapours
Morbid, diseased
Morbific, causing diseases
Mucilage, a glutinous or slimy substance
Mucus, slime, matter discharged from the nose and lungs
Muriatic, briny, like sea-salt
Narcotic, stupefactive, easing pain
Nausea, inclination to vomit
Nephritic, relating to the kidneys, or the gravel
Nitrogen, the base of nitric acid
Nonnaturals, air, diet, sleep, exercise, passions of the mind, and retentions and excretions
Nucleus, a kernel, the centre about which any thing collects
Obesity, fatness
Oxyd, a calx, a powder made by fire
Oxygen, the base of vital air, principle of acidity
Pancreas, the sweet-bread

Paralytic, relating to palsy
Paroxysm, a fit
Pathologia, doctrine of the nature and causes of diseases
Perspiration, discharge by the pores of the skin
Pestilential, infectious
Phenomena, appearances
Phlegmatic, troubled with phlegm, dull
Phlogiston, principle of inflammability
Phthisical, consumptive, wasting
Physiologia, doctrine of the use and offices of parts
Piquancy, sharpness
Pituitous, consisting of phlegm
Plenitude, Plethory, } fulness of blood
Plethora ad volumen, a partial fulness of blood
Plethora ad spatium, a general fulness of blood
Polypus, an excrescence in the nostrils or throat
Præcordia, region about the heart
Primæ viæ, first passages, i. e. the stomach and intestines
Prophylaxis, the art of preventing diseases
Proximate cause, the immediate cause of disease
Pulmonary, relating to the lungs
Pus, corruption, digested matter
Putrescent, tending to putrefaction or rottenness
Putrid, rotten
Ptyalism, a copious flow of spittle
Pylorus, the right, or inferior orifice of the stomach
Pyrexia, febrile symptoms or diseases
Quartan, returning every fourth day
Rectum, the straight or last great gut
Refrigeration, a chill, coldness
Regimen, regulation of diet
Regurgitate, to throw, or flow back
Remote cause, the inducing cause of disease
Repletion, fulness
Resuscitation, reviving, bringing to life
Retention, the retaining of some natural discharge
Rheum, a discharge from the head or throat
Ruminant, chewing the cud

Saburra, foulness of the stomach
Saccharine, relating to sugar
Saliva, the spittle
Salivation, an increased spitting
Sanguineous, Sanguine, } full of blood, warm
Sanis omnia sana, all things are wholesome for the healthy
Saponaceous, soapy
Scirrhous, Scirrhosity, } a hardened gland
Scorbutic, relating to the scurvy
Scrophula, Scrofula, } the kings-evil
Secretion, separation of the animal fluids by the glands
Sedative, allaying
Selenite, earth or salt united with vitriolic acid
Semeiotica, doctrine of the symptoms of disease or health
Semen, the seed
Serous, thin, watery
Sherbet, water soured and sweetened
Soluble, Solutive, } loose, laxative, digestible
Somnolency, a propensity to sleep
Sordes, filth
Spasm, cramp, convulsion
Stamina, solids of the human body
Sternutatory, causing sneezing
Stimulant, Stimulus, } a medicine increasing action or heat
Strata, layers
Strumous, scrofulous, relating to the glands
Stypticity, astringency
Succedaneum, a substitute
Sudorific, sweating
Swooning, fainting
Symptomatic, relating to symptoms
Systole, contraction of the heart
Technical, belonging to arts

Temperament, peculiar habit of body
Temperature, state of the air
Teribinthinæ, medicines of the turpentine kind
Tertian, returning every third day
Tetanus, the locked-jaw
Therapeutica, the knowledge of curing diseases
Thermometer, a weather glass
Tormina, gripes
Tonic, bracing, strengthening
Tuberculous, consisting of small swellings
Turgescence, an overfulness
Typhus, a genus of fever comprehending those called nervous, yellow, and putrid
Undulation, a waving motion
Unmasticated, unchewed
Uterus, the womb
Valetudinarian, a weak sickly person
Varices, swelled veins
Vascular, belonging to the vessels
Vehicle, a liquid to take medicine in
Venous, belonging to the veins
Ventilation, a free admission or motion of air
Ventilator, an engine to supply air with
Vertigo, a giddiness
Venomous, Virulent, } poisonous
Viscera, the bowels, entrails
Vitriolic, relating to vitriol
Vivifying, animating

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